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Assessing digital literacies: An ethnographic study of teachers' assessment literacies in the digital age

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Abstract

In a world increasingly driven by technology, a trend recently accelerated by the COVID-19 pandemic and the emergence of generative AI, teachers require novel assessment literacies to effectively assess students' digital literacies. This ethnographic case study explores the assessment practices of two Singaporean English Language teachers, examining the complex dynamics that shape the assessment of students' digital literacies in the classroom. Specifically, the study addresses four research questions related to the impact of teachers' formative assessment practices, digital and assessment literacies, relationships with students, and contextual barriers on the assessment of digital literacies.

Over a four-month period, data were collected through lesson observations, teacher interviews and artefacts. Using Wiliam and Thompson's (2008) formative assessment framework and thematic analysis, the study found that teachers' adeptness in facilitating meaningful learning discussions, providing personalised feedback, and leveraging technology for assessment strongly impacts their ability to develop students' digital literacies. However, teachers' own digital literacies, potentially misaligned expectations of students, and systemic constraints can limit effectiveness.

The study concludes that innovative assessment literacies, integrating digital literacies, relational elements, teacher identity and systemic constraints, are crucial for teachers to effectively assess and support students' development of digital literacies. The findings offer practical insights for educators and recommendations for teacher education programmes to equip teachers with the necessary multifaceted assessment literacies. This research contributes to understanding the complex elements shaping digital literacies assessment and offers guidance for enhancing assessment practices in the digital age.

Statement of original authorship

The work contained in this thesis has not been previously submitted to meet requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signature: [signature removed]

Date: 20 March 2024

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Preface

This thesis represents the culmination of years of research, analysis and writing. In the final stages of writing, advanced generative AI tools became available to the public. In the spirit of transparency and academic integrity, I would like to disclose the use of AI writing assistants, specifically the chatbots GPT-4 and Claude 2/3 (via Poe.com), and Grammarly. These tools provided valuable assistance in proofreading and editing the thesis, and were employed to enhance the clarity, coherence and readability of the thesis. The core research, analysis and intellectual contributions presented in this thesis remain entirely my own work.

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Chapter 1: Assessing digital literacies in the classroom

1.1 Background

In recent years, education systems around the world have demonstrated a growing interest in the cultivation of so-called '21st century competencies' (21CCs) (e.g., Battelle for Kids, 2019; Binkley et al., 2012; European Commission, 2019; Ministry of Education, 2023). 21CCs are generally thought to include critical thinking and problem-solving, communication, collaboration and teamwork, cultural awareness, personal and social responsibility, metacognition, and – importantly – digital literacies. The focus on digital literacies, in particular, has become even more pronounced following the Covid-19 pandemic, a period when education rapidly switched to online modes across many countries. Post-pandemic, as we move further into the digital age, students continue to need to develop the literacies required to effectively navigate and participate in digitally-mediated social practices.

The term 'digital literacies' refers to a set of competencies that move beyond being able to use digital technologies (although this is an important component of digital literacies); rather, it also involves understanding how digital technologies shape communication, culture, and society, and how to use digital technologies responsibly and ethically (Jones & Hafner, 2021; Lankshear & Knobel, 2011; Rheingold, 2012). Digital literacies also include the ability to critically evaluate digital content, understand digital rights and responsibilities, and create and share digital content (Jenkins et al., 2009). These literacies are increasingly important in a world where digital technologies are fundamentally changing the way we work, communicate, and engage with the world around us.

From the perspective of language education, digital literacies have been explored in the research literature, notably from the perspectives of New Literacy Studies (NLS) (Heath, 1983; Mills, 2010; Street, 1984); multiliteracies (Pegrum, 2011; The New

London Group, 1996), and new literacies (Lankshear & Knobel, 2011). However, the assessment of digital literacies remains an under-researched area. One of the challenges in assessing digital literacies is the rapid pace of change in digital technologies. The literacies needed to use digital technologies effectively are constantly evolving, making it difficult to develop assessments that remain relevant over time (Leu et al., 2018). Additionally, as noted above, digital literacies are multidimensional and involve a range of practices and competencies, making them difficult to assess with traditional assessment methods that often focus on isolated skills or knowledge areas (Kern, 2021).

Significant innovations in assessing digital literacies have not yet emerged in large-scale assessments (such as national examinations and international standardised tests), which tend to rely on traditional pen-and-paper tests that cannot adequately measure these competencies (Clarke-Midura & Dede, 2010). Alternative online assessment methods often merely replicate traditional approaches in digital form – the ‘old wine in new bottles’ syndrome (Lankshear & Bigum, 1999); for example, test-takers might be tasked to write text-based essays using word processing, complete a text-based test online, or write letters as emails. This is because the nature of the constructs has remained ‘analogue’, reflecting little of digital literacies, and associated learning theories and concepts.

Such repackaged tests aim to measure the test-takers’ proficiency in traditional literacies; for instance, even when they are asked to write an email, the criteria reflect the conventions of traditional letter-writing, ignoring the reality that letters and emails are different genres (or groups of genres). Similarly, there is little difference between completing an MCQ test online and on paper, if the test items are identical. Moving beyond this current stasis demands innovative approaches to assessment, both in classroom contexts and more broadly. However, this kind of innovation will arguably require new types of digital assessment literacies, from both educators and learners, to make such assessments feasible.

1.2 Research problem

While digital literacies have become increasingly critical in the 21st century, traditional assessments often fall short in evaluating these emergent competencies. Assessments like standardised tests struggle to capture the complexity of digital literacies, which are socially situated and demand skills like critical thinking, multimodality, information literacy, and technological proficiency (Clarke-Midura & Dede, 2010; Lankshear & Knobel, 2011).

There is also a lack of understanding of the specific assessment literacies teachers require to effectively evaluate digital literacies in the classroom. Key knowledge gaps exist regarding how teachers' formative assessment practices shape digital literacies development. Moreover, little is known about how teachers' own digital literacies influence their assessment capabilities in this domain. The teacher-student relationship is another crucial but under-researched dimension affecting digital literacy assessment experiences. Broader systemic constraints, like high-stakes testing, infrastructure limitations and traditional school norms, also persist as barriers, despite teacher efforts.

This study aims to address these gaps by examining the assessment of digital literacies through an in-depth ethnographic study of two teachers' classroom practices. Just as digital literacies refer to socially-situated practices rather than isolated skills (Lankshear & Knobel, 2015), so should assessment literacies be conceived similarly (Willis et al., 2013). Boud et al. (2018) have called for assessment research through the perspective of (social) practice theory (Schatzki, 2012), proposing that it is by examining the ways assessment is, and not the way it should be, that we can understand why undesirable practices are resistant to change. For the purpose of this thesis, I understand a social practice perspective to refer to the view that literacies (whether digital or assessment) are local and socially situated practices, rather than universal and discrete skills. Adopting such a perspective for

both digital literacies and assessment literacies allows for a consistent learning theory framework.

This study adopts the practice-focused approach described above in researching the assessment of digital literacies in the classroom. The research aims to provide insights into the assessment literacies involved when teachers evaluate emergent digital literacies among students. It is hoped that a better understanding of assessment-as-practice can elucidate ways to develop teacher assessment capabilities to meet the demands of 21st-century education. The findings aim to provide actionable insights to guide policies and pedagogies for preparing teachers to assess 21st-century competencies. As schools accelerate technology integration, equipping educators with the expertise to assess digital literacies authentically and effectively is essential. This study intends to elucidate how teachers navigate this complex task, shedding light on the multifaceted literacies, relationships, contextual elements and compromises that characterise the assessment of digital literacies. The knowledge generated can inform professional development and systemic improvements needed to enhance classroom assessment practices.

1.3 Research approach

This thesis adopts an ethnographic case study approach to examine the assessment of digital literacies in secondary school classrooms. Case study involves an in-depth investigation of a phenomenon within its real-world context (Yin, 2014). It is suitable for studying assessment as a social practice and capturing the complexities of real-life classrooms. Specifically, this research employs an ethnographic case study, combining intensive fieldwork and multiple data sources to produce a rich, contextualised analysis (Fusch et al., 2017). The ethnographic perspective, involving methods like participant-observation and interviews, is well-suited to uncovering the intricacies of assessment practices (Schatzki, 2012).

Two Secondary 2 English classes in a Singapore neighbourhood school were selected to participate in the study. The classes were taught by different teachers (pseudonyms Jen and Yvette) over one semester as they completed a digital curation project (see [section 3.3](#)). Data collection involved lesson observations with audio recordings, a pupil questionnaire, collection of digital artefacts, and interviews with teachers and pupils. Data analysis focused on the curation project observations and teacher interviews. Lessons were divided into assessment opportunities (Hill, 2012). Teachers' practices were analysed using Wiliam and Thompson's (2008) formative assessment strategies framework. Thematic analysis (Braun & Clarke, 2013) was employed to derive overarching themes characterising the assessment practices.

1.4 Research site

Singapore education system

The research site in this study was a secondary school in Singapore; specifically, two Secondary 2 English Language classes, each taught by a different Singaporean teacher. I observed both classes over a period of about two months as they tackled an assessed project involving digital curation, with interviews conducted before and after this period (resulting in a data collection period of about four months). I chose ethnographic case study as my methodological approach, which involved participant-observation of lessons, a pupil questionnaire, the collection of digital artefacts, and teacher and pupil interviews. Further details of the approach and methods are provided in Chapter 3. In this section, I will provide some further details about the broader context of the Singapore education system and the specific school that was the site of the study.

The Singapore education system is largely centralised, falling under the direct or indirect supervision of the Ministry of Education (MOE). State schools fall under direct supervision, with the MOE setting the national curriculum, managing teacher recruitment and training, and administering national examinations. Autonomous

schools, while enjoying more flexibility in budgeting, curriculum and teaching methods, still adhere to the national curriculum and are indirectly supervised by the MOE. Private schools and international schools, which have more autonomy in their operations, are nevertheless subject to certain MOE regulations, illustrating the MOE's indirect supervision. Overall, whether through direct control or regulatory influence, the MOE plays a pivotal role in shaping Singapore's education landscape.

The majority of students attend state schools directly governed by the MOE. While the full range of possible pathways through the education system is complex, for the sake of brevity, I will focus on the routes most relevant to the students who participated in this study. Figure 1 provides a flowchart illustrating all potential routes (as of the time of data collection in 2014). Compulsory education starts at age seven and lasts six years in primary school. At the end of Primary 6, students sit for the Primary School Leaving Examination (PSLE), a high-stakes national examination that significantly influences the secondary school they will attend.

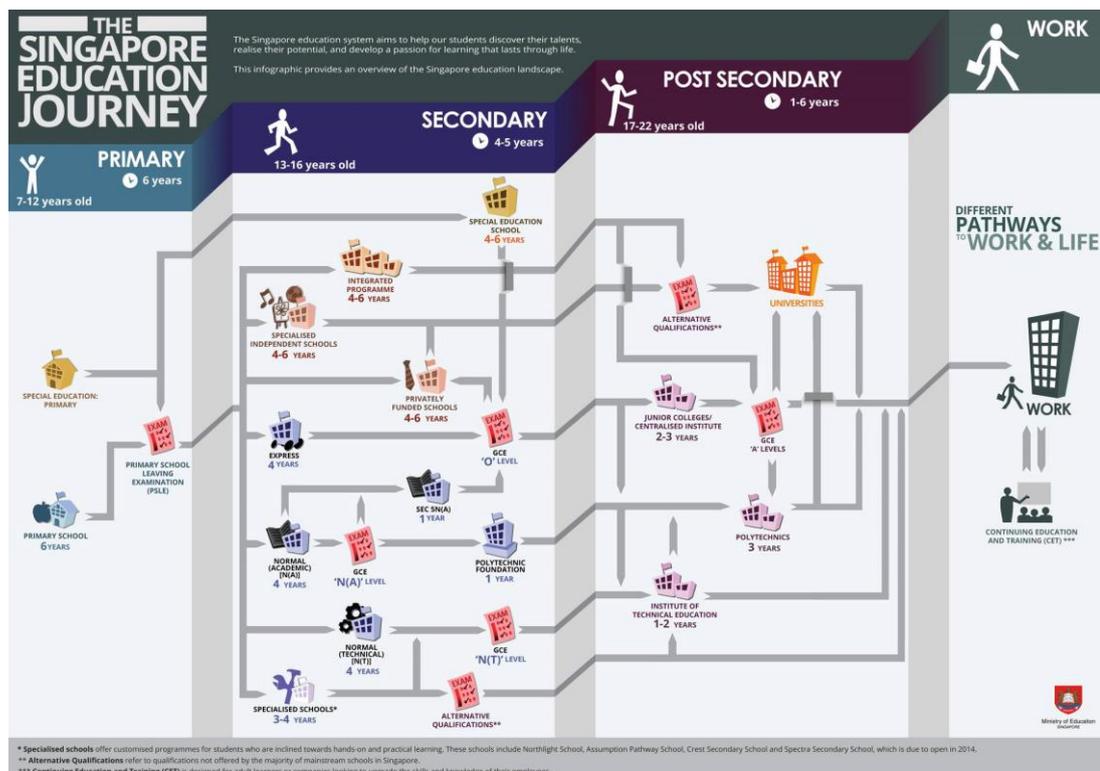


Figure 1 The Singapore education journey (Ministry of Education Singapore, 2013)

The higher-performing students typically enter the 4-year 'Express' stream, concluding with the Singapore-Cambridge General Certificate of Education Ordinary Level Examination. Students with below-average performance usually enter either the 'Normal (Academic)' (N(A)) or the 'Normal (Technical)' (N(T)) stream. N(A) students sit for the Singapore-Cambridge General Certificate of Education N(A) Level Examination after four years, with the option of an additional year of secondary school before taking the Ordinary Level Examination. (This system is due to be phased out in favour of unified exams in 2027.) The Singapore-Cambridge General Certificate of Education examinations are jointly awarded by the MOE and University of Cambridge International Examinations.

Upon completing secondary school, students have various pathways to choose from, depending on their performance in these aforementioned state examinations. Those who perform well often choose to enrol in junior colleges for a two-year pre-university course, culminating in the Singapore-Cambridge General Certificate of Education Advanced Level Examination. This examination plays a substantial role in determining the courses and universities for which they are eligible, both locally and internationally. Alternatively, students may choose to attend polytechnics, which offer a wide range of diploma courses and provide a more practice-oriented curriculum. Such graduates can apply to local and overseas universities. Some universities even offer advanced standing or credit transfers for polytechnic graduates, which means they could enter in the second or third year of a degree programme.

N(A) students have the chance to transfer to the Express stream before Secondary 3, provided they perform well enough in school examinations. Even if they do not manage to do so, the extra year they have over Express students before tackling the Ordinary Level Examination can work to their advantage. Their options after this include further studies in junior colleges, polytechnics, or the Institute of Technical Education (ITE) (which focuses on vocational education and training). Thus, N(A)

students technically have the opportunity to progress to university. However, this is challenging in practice due to the competitive nature of university admissions. Until fairly recently, even polytechnic students found it difficult to gain entry into local universities. Consequently, despite the government's efforts, there remains a strong stigma against being in one of the Normal streams, particularly for N(T) students. For the purpose of this study, it is important to bear in mind that from as early as age 13, N(A) students are often perceived as less academically inclined and unlikely to progress to university. In a society that highly values higher education and tends to look down on non-graduates, this perception can serve as a proxy measure of social class (see Pan, 2018).

State schools are all English medium, meaning that almost all subjects (other than 'mother tongue' and mother tongue literature) are taught in English. When this bilingual system first began in the 1960s, the majority of Singaporeans did not speak English as a home language, reflecting the ethnic makeup of the population (figure 2). Over the decades, however, the importance placed on English has resulted in it superseding Singaporeans' 'mother tongue' as their first or home language (Bolton & Ng, 2014). As with education, English language proficiency can serve (rightly or wrongly) as a proxy measure of social class, in particular the ability to code-switch successfully between Colloquial Singapore English (aka 'Singlish', spoken by the vast majority of the population) and Standard Singapore English (tested in education and a mark of proficiency) (Y. Tan, 2023).



Figure 2 Ethnic composition of Singapore’s resident population, the proportions which have not changed since the 19th century. Image from the Population Dashboard (Department of Statistics Singapore, 2024)

On most school days, pupils have English Language classes. The English Language teaching syllabus comes from the MOE. The English Language examination syllabuses, however, are written by the Singapore Examination and Assessment Board (SEAB), a statutory board reporting to the MOE. At the time of data collection in 2014, the divergence between the two sets of syllabi often resulted in tension between teaching aims and national examinations. The Ordinary Level examination syllabus in 2016 admitted that teaching aims ‘form the broad basis of a course of study; they may not all be translated into Assessment Objectives for formal examination’ (Singapore Examinations and Assessment Board, 2016, p. 2). The omission of viewing and representing multimodal texts in the examination syllabus at that time was significant, as multimodality is a primary characteristic of digital literacies.

As I have argued, pen-and-paper tests cannot properly assess digital literacies. The pragmatic choice for many stakeholders is to choose to meet the demands of examinations, since, as stated, they largely determine academic progression. This means that the drive towards digital literacies, evident in the 21st-century competencies framework, the MOE's Information and Communications Technology (ICT) Masterplans, and participation in the Assessment and Teaching of 21st Century Skills (ATC21S) project, may have limited impact on the ground. The power of washback is evident in the limited effectiveness of the MOE's moves to counter the examination or summative assessment culture with assessment initiatives emphasising balanced or holistic assessment (Wong et al., 2020). These include formative assessment, self-assessment and project work. As Hogan et al. (2009) stated, 'the status and influence of the national high-stakes assessment system has weakened the opportunity of schools to engage in systematic and sustainable pedagogical innovation necessary to prepare young people for the demands of the 21st-century institutional environments' (p. 213).

'North River Secondary School'

Atypical cases often serve as a rich source of data for ethnographic case studies, affording unique insights that can challenge normative assumptions and extend our understanding of the field of study (Abramson, 1992). For this research, my initial vision was to focus on atypical schools – specifically, those that have extensively integrated educational technology into their curriculum, thereby representing a departure from the conventional pedagogical model. I believed that such a case would offer a valuable opportunity to explore the implications of technology use in an educational context, as well as its influence on teaching and learning practices. Unfortunately, I was unable to find a school of this kind that was interested in participating. On hearing about my problem, a secondary school teacher named Jen (one of the teachers who would eventually participate in this study and an ex-

colleague; all names are pseudonyms) expressed interest and offered to approach her Head of Department and other colleagues on my behalf.

Jen's offer presented a new direction for the study. While her school may not have fully embodied the 'atypical' model I initially sought, it nevertheless offered a valuable context for exploring the interplay between technology, teaching and learning. It also underscored the fact that even 'typical' schools are complex, dynamic environments where innovative practices can emerge. The overall school context may be deemed typical within Singaporean standards, yet the two participating classes stand out as atypical. As I will elaborate below, this 'telling case' (Mitchell, 1984) offered unique insights into the relationship between curriculum innovation, teacher readiness and student performance. With this new focus, I decided to pivot my research and accepted Jen's offer.

Jen's school, which we shall call 'North River Secondary' (not its real name), is a state secondary school, one of many termed 'neighbourhood schools' (as opposed to 'elite schools'). Like all schools in Singapore, it is in an urban setting (Singapore being a city state), and, like all state schools, with an ethnic makeup that reflects the country as a whole. The MOE does not publish figures on student and teacher numbers in individual schools but as of 2015, the average Pupil-Teacher Ratio was known to be 13 (Ministry of Education Singapore, 2016). The average class size was 34 (Ministry of Education Singapore, 2017).

The MOE scrapped secondary school banding in 2012, but in the 2011 School Achievement Table for Normal Course (Ministry of Education Singapore, 2011) this school was placed in Band 5, indicating that this was then one of the worst performing schools in the Ordinary Level Examination. The classes which eventually participated were two Secondary 2 N(A) classes of 40 pupils each. In other words, these were children who had performed below average in their PSLE. There is no data on the students' socio-economic backgrounds, but they are likely to range from medium to low (to be fair, a generalisation based on their academic performance).

The two participating English Language classes were taught by different teachers. 2F was taught by Yvette, who was younger and relatively new to the profession, having taught for four years after graduating from the National Institute of Education (NIE) with a Postgraduate Diploma in Education. (The majority of state school teachers in Singapore are trained at NIE.) Yvette was posted to North River by the MOE on graduating from NIE. Jen taught 2G, and was very experienced, having taught for 19 years at the time of the study. She has a Master of Arts (Applied Linguistics) degree from NIE, where she has also taught ELT methodology as a lecturer seconded from the MOE. We got acquainted at NIE, having both started work there on the same day. Jen's research interests lay in New Literacy Studies and multimodality. She returned to teaching in school after her stint at NIE ended, having expressed a preference for teaching in so-called 'neighbourhood' schools, which she found more rewarding. Jen was the English Language teacher-in-charge for all three Secondary 2N(A) classes, and thus determined their teaching syllabus and assessments. In many aspects, Jen was Yvette's de facto mentor.

As previously mentioned, while this school is, as a whole, more typical than atypical in Singapore, the two participating classes might be considered atypical for such schools, as such classes were not usually targeted for digitally-mediated lessons. Low-performing schools here are known, at least anecdotally, to be less experimental and less likely to veer off the tried and tested path of an examination-oriented school curriculum, as this was considered too risky. There was an assumption that pupils in such schools are less able to cope with a less common and therefore (supposedly) more challenging curriculum, and also perhaps that teachers in such schools are less able or ready to teach it. It could also be argued, however, that the typical pupil in such schools, being of lower socioeconomic status, has potentially more to gain from a curriculum that eschews traditional academics (which they have supposedly already proved themselves to be less inclined towards) and emphasises digital competencies that they might not acquire otherwise outside of school. Such a curriculum, in other words, can work to narrow the digital divide (not so much in the

sense of access to computing devices and internet connectivity, but more in the sense of acquiring the competencies to leverage them; see Warschauer, 2003). In reality, schools would nevertheless prioritise national exams over this.

Although the classes studied may be considered atypical, their unique characteristics and the challenges they face could provide rich insights that might not be gleanable from more 'typical' cases, better illustrating the harder struggles of innovation-inclined teachers in schools that are generally resistant to change, which probably form the majority of local schools. The atypical nature of the two participating classes in an otherwise typical school helps draw attention to the challenges of implementing innovative curricula in a traditionally examination-oriented environment (Mitchell's (1984) 'telling case'). This unique situation could reveal previously obscure relationships between curriculum innovation, teacher readiness and student performance.

Studying these atypical classes might also expose the extent to which low-performing schools can venture off the conventional academic path and still achieve meaningful results (Abramson's (1992) 'boundaries of experience'). This notion aligns with Stake's (1995) recommendation to choose cases that maximise what we can learn. This could provide key insights into how to promote meaningful changes in similar settings, thus making this study highly relevant to many local schools.

Access to the school itself was relatively easy for me, as the Head of Department trusted Jen and gave her considerable autonomy. The participants were therefore as well disposed to my research activity as one could expect. However, permission from the MOE took unexpectedly longer to obtain than I had expected, as did ethical approval from Lancaster University. The delays resulted largely from changes in procedure that I had not anticipated.

1.5 Thesis overview

As mentioned above, this thesis aims to address key gaps in our understanding of how digital literacies are assessed within classroom settings. To guide this exploration, I posed the following research questions:

RQ1: How do teachers' formative assessment practices impact the assessment of digital literacies?

RQ2: What specific assessment literacies are required for teachers to effectively assess digital literacies in the classroom?

RQ3: How do teachers' own digital literacies affect their assessment of digital literacies in learners?

RQ4: How do teacher-student relationships, expectations, and mindsets affect the assessment of digital literacies?

The following provides a concise overview of each chapter in this thesis:

Chapter 1: Assessing digital literacies in the classroom

This chapter introduces the research background, problem, and approach. It discusses the challenges of assessing digital literacies, outlines the rationale for adopting a social practice perspective on digital and assessment literacies, provides an overview of the Singapore education context and participating schools, and presents the four research questions.

Chapter 2: Reviewing the literature

This chapter reviews key advancements and challenges in assessing digital literacies. It examines the role of formative assessment practices in developing digital literacies, the assessment literacies teachers need to effectively evaluate digital literacies, how

teachers' own digital literacies shape this assessment, and the influence of teacher-student relationships on assessment practices.

Chapter 3: An ethnographic case study

This chapter outlines in more detail the ethnographic case study approach used to examine classroom assessment of digital literacies in two Singapore secondary school English classes. It justifies the rationale for an ethnographic case study methodology and details the data collection methods, ethical considerations, and approach to data analysis. Key methods included classroom observations, teacher/student interviews, questionnaires and collection of digital artefacts. Data analysis employed Wiliam and Thompson (2008) formative assessment model and thematic analysis.

Chapters 4 & 5: Yvette's class & Jen's class

These two chapters present the study's findings; Chapter 4 focuses on Yvette's class and Chapter 5 on Jen's class. Both chapters first analyse the teacher's formative assessment practices during a digital curation project. Then, using an analytical framework incorporating digital literacies, assessment literacies, relationships and systemic factors, key facets characterising each teacher's assessment practices are examined.

Chapter 6: Discussion

This chapter delves deeper into interpreting and analysing the key findings around the four research questions. It highlights the vital role played by formative assessment practices, specific assessment literacies, teacher digital literacies and teacher-student relationships in shaping the assessment of digital literacies. It also outlines areas for expanding assessment literacy models and teacher identities for digital contexts, and considers multimodal tasks as innovative assessments.

Chapter 7: Conclusion

This chapter summarises the key findings showing teachers' significant influence on digital literacies assessment through their practices, literacies, relationships and mindsets. It outlines theoretical and methodological contributions such as expanding assessment literacy models and using ethnographic case studies. Practical implications for improving classroom assessment are discussed. Limitations are acknowledged, and areas for further research, including emerging technologies, are proposed. It concludes by emphasising the urgent need for revolutionary changes in assessment practices to prepare learners for the digital age.

Chapter 8: Coda

This final chapter revisits key themes in light of recent educational technology developments, particularly generative AI. It considers the complexity of teacher assessment literacies, methodological aspects of studying formative assessment, the evolving edtech landscape since data collection, and the broader relevance of the study's insights. The coda situates the research within current debates on educational assessment, digital literacies, and teacher development.

For ease of reference, a comprehensive list of apps/programs and websites mentioned in the thesis can be found in Appendix F.

Chapter 2: Reviewing the literature

While substantial prior research exists on formative assessment, teacher assessment literacies, systemic constraints, and relational dynamics in education, gaps remain in understanding these issues specifically in the context of digital literacies assessment. This study addresses gaps in the literature on how formative assessment shapes the development of digital literacies (RQ1), what assessment literacies are needed for such assessments (RQ2), how teacher digital literacies influence such assessments (RQ3), and how relationships shape such assessments (RQ4). By reviewing this body of literature, I aim to provide a nuanced understanding of effective digital literacies assessment in classrooms. This chapter highlights key advancements and persistent challenges that frame the rationale for this study.

2.1 New learning paradigms and the assessment of digital literacies

This section provides an overview of digital literacies, discusses new learning paradigms that have emerged in the digital age, and explores innovative assessment methods that are designed to evaluate digital literacies effectively. It begins with an overview of the key developments in understanding the breadth and depth of digital literacies. It then delves into the frameworks that have been developed to assess 21st-century skills within the context of digital literacies. Finally, it explores innovative assessment frameworks that could shape the effective assessment of digital literacies. Examining these elements aims to contextualise how teachers assess digital literacies in classrooms, a key focus of this thesis.

Digital literacies

As established in the introduction, this thesis aims to examine how digital literacies are assessed within classroom settings by teachers. It poses research questions related to how teachers' digital and assessment practices/literacies and relationships impact the assessment of digital literacies in learners. Examining these elements

through an ethnographic case study will provide valuable insights into supporting teachers to evaluate the complex competencies involved in digital literacies effectively. It is first necessary, though, to establish why digital literacies are considered important, how they are defined and what they are thought to include.

To fully grasp the significance of digital literacies, it is useful to understand how the concept of literacy itself has evolved over time. The popular, 'everyday', view of literacy first came under question when Scribner and Cole (1978) revealed the findings of their ground-breaking work conducted in the Vai area, Liberia. They did an extensive ethnographic study of the literacies practices of the Vai people and were amongst the first to attempt to re-conceptualise what counts as literacy by looking for empirical data outside school. Their study showed that learning of abstract skills of reading and writing in school did not give rise to 'higher mental abilities'. Rather, it had quite narrow and specific effects. Their research revealed that school fostered a contrived and decontextualised 'ability' to read or write, which did little to apprentice students as part of a social group.

In the domain of literacy studies, two critical developments relevant to digital literacies are notable: new literacies (e.g., Lankshear & Knobel, 2015) and New Literacy Studies (NLS) (e.g., Street, 1984). The former, new literacies, has addressed evolving literacy practices, especially those linked to ICT, while NLS proposed a sociocultural viewpoint of literacies, seeing them as socially situated practices, not just skills. Both discourses share a common thread—the significance of digital literacies (Jones & Hafner, 2021). Discourse in this broad school of thought can usually be identified through the use of the plural 'literacies', as I have done in this thesis. Digital literacies are thought to be particularly significant because they are seen as essential for full participation in today's increasingly digital world.

In terms of definitions, digital literacies often refer broadly to the requisite knowledge, skills and attitudes for effectively interacting with and utilising digital technologies and information across various contexts. The term, however, is

multifaceted and often associated with other related literacies. Wilson (1998), for instance, used the term to denote the ability to evaluate internet resources, while Bawden (2001) introduced 'mediacy' as the literacy needed to access digital information across various media. Alexander et al. (2016) identified three digital literacies—universal literacy, creative literacy and literacy across disciplines—with each reflecting different learning contexts.

In a more recent systematic literature review, Audrin and Audrin (2022) uncovered a proliferation of related terms like digital skills, digital competence, and 21st century skills used interchangeably, indicating a need to clarify definitions and terminology. However, three key research streams were identified – digital literacy development, digital learning, and 21st-century digital skills – undergirded by informational and technological foundations. The review indicated that digital literacy is a rising topic in education research encompassing technical skills, cognition, problem-solving, communication and critical thinking. However, further research was recommended to bridge classroom digital literacy with broader societal applications.

A particularly clear definition has been advanced by Jones and Hafner (2021), who described digital literacies as 'the practices of communicating, relating, thinking and “being” associated with digital media' (p. 12). This definition transcends technological constraints and affordances, incorporating how individuals interact socially using these tools. Their focus was on the mediation process rather than the tools, emphasising how digital tools have redefined 'old' literacy practices, reminding us that 'new' technologies are rapidly becoming 'old'. This is the definition adopted in this study, as it aligns with the perspectives of both new literacies and NLS.

To better delineate the differences between the two lenses, Lankshear and Knobel (2011) expressed how one perceives technology as merely a skill and the other views it as a social practice. The former emphasises acquiring specific technological skills and competencies, like operating software or devices, and views technology as a neutral, decontextualised entity that can enhance learning outcomes and efficiency.

Conversely, the latter takes a broader, critical stance, acknowledging that technology use is embedded within social, cultural and institutional contexts.

Beyond broad definitions, there have also been conceptualisations of the sub-components of digital literacies. Rheingold (2012), for example, identified five key digital literacies that are central to the concept: attention literacy, information literacy (conceptualised as 'crap detection'), participation literacy, collaboration literacy and network smarts, which includes the ability to establish and maintain social capital and build a quality Personal Learning Network (Couros, 2010). Other frequently discussed aspects of digital literacies include multimodality (Kress, 2003), and online language and interaction (Barton & Lee, 2013; Crystal, 2007).

Drawing together these perspectives, the field of digital literacies is viewed as complex and multifaceted, encompassing more than just technical skills. It also encompasses the understanding and critique of the social, cultural, and institutional implications of technology use. This intricate landscape is best navigated by considering both the skill-focused and social practice perspectives, acknowledging the instrumental value of technology while also recognising its deeper, intertwined relation with social practices. Understanding digital literacies is crucial for both teachers, as they aim to assess these competencies in learners, and for learners as they navigate today's digital-rich world, and develop important skills for learning, communicating and participating in society.

New learning paradigms

From a theoretical perspective, educational research has witnessed various developments stemming from the exponential growth in ICT, such as new theories of learning that are better aligned with the digital age (Wheeler, 2013). Prominent theories include connectivism (Siemens, 2004a), rhizomatic learning (Cormier, 2008), paralogy (Corneli & Danoff, 2011) and heutagogy (Hase & Kenyon, 2007). These emergent learning theories offer a fresh perspective on this evolving landscape. They

deviate from traditional cognitive/behaviourist theories in a number of ways, and also provide novel implications for learner assessment. They have in common a focus on learner-centred, authentic, and contextually relevant assessment approaches that align with their principles; however, each represents a unique approach. In this section, I will provide an overview of these new learning paradigms.

Connectivism, introduced by Siemens (2004a), emphasises the distributed nature of knowledge and the significance of networks in learning. It advocates that learning does not solely happen at the individual level, but through connections and interactions with others and with digital technologies. It refutes the idea that knowledge solely resides within individuals and instead, emphasises the capability to access and navigate information networks. It also highlights how technology facilitates learning and knowledge creation. In terms of assessment, connectivism encourages a transition from traditional standardised tests to assessment forms that are more collaborative and networked. This could involve online discussions, peer feedback, and evaluations of contributions to digital networks. Instead of focusing solely on knowledge acquisition, assessment in connectivism prioritises the ability to navigate and contribute to knowledge networks (Yousef & Sumner, 2021).

Rhizomatic learning, as defined by Cormier (2008), is characterised by its non-linear and decentralised approach. It likens learning to the growth of a rhizome, a root system that expands horizontally, connecting various nodes. From this perspective, knowledge is seen as continuously evolving and interconnected. Learners are encouraged to explore and make connections in a self-directed manner, challenging the traditional linear and hierarchical structure of knowledge. In terms of assessment, rhizomatic learning proposes a shift away from predetermined learning outcomes and standardised assessments. Assessment here focuses on the learning process, the ability to make connections, and the development of critical thinking skills. Self-reflection, portfolio assessments and collaborative evaluation are some methods used (Heinrich & Green, 2020).

Paragogy, as coined by Corneli and Danoff (2011), emphasises peer-to-peer learning and co-creation of knowledge. It underscores the importance of collaboration, self-organisation, and shared responsibility in learning. This theory challenges the traditional teacher-centred approach to education and promotes a more participatory and learner-driven model. Assessment in paragogy evaluates collaborative projects, group discussions and contributions to the learning community. It values the learning process, collaboration, and the development of critical thinking and problem-solving skills.

Heutagogy, as discussed by Hase and Kenyon (2007), focuses on self-determined learning and learner autonomy. It moves beyond traditional pedagogical approaches that position the instructor as the primary source of knowledge, and instead empowers learners to take an active role in their learning journey. Heutagogy recognises the importance of metacognition, reflection and non-linear learning in fostering lifelong learning skills. Assessment in heutagogy shifts from being solely evaluative to being formative and supportive. It serves as a tool for guiding and enhancing learning, providing learners with feedback and opportunities for reflection and improvement. Self-assessment, goal-setting and the development of learning portfolios are some of the methods used (Lock et al., 2021).

These paradigms diverge significantly from the more traditional cognitive/behaviourist emphasis on knowledge acquisition and retention. Instead, they foreground the learning process, critical thinking, problem-solving abilities, and the capacity to traverse complex knowledge networks. The emphasis on learner autonomy, self-directed learning and the collaborative creation of knowledge also sets them apart. Born of the digital age, these theories underscore the distributed nature of knowledge, and the significance of networking and connections. Moreover, they align with the perspective that views digital and assessment literacies as social practices rather than isolated skills. This perspective calls for the authentic assessment of digital literacies and highlights the need for assessments that facilitate

technology-supported, networked learning—assessments that are essential for capturing 21st-century competencies, particularly digital literacies.

In summarising the key elements of these new learning paradigms, this section highlights their relevance to my research questions. The theories advocate assessment approaches that prioritise authentic, reflective methods leveraging technology, and recognise learners as active knowledge navigators within networks rather than passive receivers. In such paradigms, assessments must evolve beyond traditional testing. In the next section, I turn to the literature on assessment, specifically focusing on approaches to the assessment of digital literacies.

Assessing digital literacies

Several scholars, including Blaschke and Hase (2019), and Dron (2018), have called for new forms of assessment that align with the digital era learning paradigms discussed above. They recognised the need to move away from traditional assessments focused solely on knowledge recall, advocating instead for authentic, performance-based, technology-enhanced assessments. Blaschke and Hase proposed using authentic assessment methods like project-based assessments and self-assessment to support heutagogical learning approaches. Dron discussed the limitations of traditional in-person learning environments and called for the development of smart learning environments, leveraging technology to enable more effective, adaptive assessment practices.

As Clarke-Midura and Dede (2010) argued, traditional pen and paper tests cannot adequately measure important outcomes such as scientific inquiry and 21st-century skills. That assessment has to go beyond the timed pen and paper test may seem obvious, but the alternative assessment methods that have been used often do not go beyond straightforward equivalents in electronic form, the ‘old wine in new bottles’ syndrome (Lankshear & Bigum, 1999), mentioned in Chapter 1, that is so often criticised in elearning. This is because the nature of the constructs has

remained 'analogue', reflecting little of digital literacies, and their associated learning theories and concepts (see Wheeler, 2013). Traditional standardised assessments often fall short of capturing the intricate nature of digital literacies, primarily due to their disconnection from authentic contexts (Lankshear & Knobel, 2011). This inadequacy has sparked a need for developing more meaningful, context-sensitive approaches to assessment.

We can trace the history of ICT-enabled assessment through four generations (Redecker & Johannessen, 2013, p. 81):

1. Computerised testing (administering conventional tests by computer);
2. Computerised adaptive testing (tailoring the difficulty or contents or an aspect of the timing on the basis of test-takers' responses);
3. Continuous measurement (using calibrated measures to continuously and unobtrusively estimate dynamic changes in the student's achievement trajectory);
4. Intelligent measurement (producing intelligent scoring, interpretation of individual profiles, and advice to learners and teachers by means of knowledge bases and inferencing procedures).

In the age of intelligent measurement, scholars have argued that it is time to move beyond viewing e-assessment as a more convenient and efficient means to the same end, and rather to find in it possibilities to assess what we could not before (e.g., metacognition, creativity, learning to learn and lifelong skills) (Binkley et al., 2012). E-assessment can also introduce new dimensions, such as multimodal literacy. To that end, there are numerous 21st-century skills frameworks that have been proposed. However, I have chosen to highlight just a few to show the range they encompass. Such frameworks outline the skills and competencies that are considered essential for individuals to thrive in the digital era. They aim to provide a guide for educators and policymakers to design educational programmes and assessments that align with the demands of the 21st-century.

Binkley et al. (2012), through the large-scale international Assessment and Teaching of 21st Century Skills (ATC21S) project, developed an influential framework for assessing 21st-century skills. ATC21S involved researchers from universities, companies and organisations aiming to develop valid, reliable and fair assessments of important competencies for the future. The framework identified four main categories of 21st-century skills that are highly relevant to this study examining assessment of digital literacies: ways of thinking, ways of working, tools for working, and living in the world. Specifically, the 'tools for working' category focused on information literacy, media literacy and ICT literacy – encompassing digital literacies. The ATC21S framework provided a comprehensive yet practical guide for educators and policymakers to develop educational programmes and assessments addressing these essential future-focused skills, extending beyond traditional assessments. It represented an important effort to move towards evaluating higher-order thinking capabilities required for the 21st-century rather than isolated content knowledge.

Voogt and Roblin (2010) analysed frameworks for 21st-century skills, providing insight into intentions, implementation and assessment. They noted agreement that core skills include communication, collaboration, information literacy, ICT literacy, creativity, critical thinking and problem solving. However, frameworks differed in definitions and groupings. ICT was recognised as both driving the need for 21st-century skills and as a tool to support their development, with an emphasis on embedding ICT skills across other areas. The researchers argued that successful implementation requires integrating 21st-century skills across subject areas in the curriculum, along with new forms of teaching and assessment aligned with these skills, such as formative assessment and the use of technology. There was consensus in the frameworks analysed that professional development is critical to support teachers. Implementation strategies should build on previous work, involve key stakeholders, start small, and leverage school technologies, with national frameworks and strategies providing important guidance and support.

The studies above represent important milestones in the development of research in the assessment of digital literacies. Binkley et al.'s (2012) focus on 'tools for working', encompassing ICT literacy within the ATC21S project, offered a model for educators to assess and develop digital literacies through authentic, performance-based methods. Voogt and Roblin (2010) complemented this by highlighting the need for ICT integration across curricula and innovative assessment strategies, beyond standardised testing. Both papers advocate for a shift in educational focus towards higher-order thinking and digital skills, emphasising the importance of professional development and stakeholder involvement in the evolution of digital literacies assessment.

Returning to the topic of ICT-enabled assessment, as exciting as intelligent measurement sounds, it is important to look beyond measurement. Existing classroom-based assessments often do not tend to serve teachers and learners well, and the concept of assessment needs to be broadened to address the learning process (McNamara, 2001). Such an approach should involve learners in the process so that they may develop self-assessment capabilities. Technology can facilitate this by augmenting formative assessment and feedback in the following aspects (Jisc, 2010, p. 17):

- Dialogue and communication
- Immediacy and contingency
- Authenticity
- Speed and ease of processing
- Self-evaluative, self-regulated learning
- Additionality (assessing the previously inaccessible, and providing personalised feedback efficiently to large groups)

It can be concluded from the literature review thus far that assessment in the digital age can (and perhaps, should):

- leverage the affordances of digital tools
- prioritise learning over measurement
- capture complexity and process at scale (i.e., not one learner at a time)
- value peer and self-assessment, formal and informal learning, and authenticity and real-world relevance (some hallmarks of new theories of learning for the digital age).

Such forms of assessment would be fit-for-purpose in assessing digital literacies.

Among these innovative methods is the incorporation of multimodal production tasks. In these tasks, students amalgamate their understanding across various media forms to communicate ideas effectively to their intended audiences (Kimber & Wyatt-Smith, 2008; Lotherington & Ronda, 2014). The assessment of these creative products offers valuable insights into essential capabilities such as collaboration, critical thinking, and communication.

Other promising and holistic approaches include ePortfolio assessment (Barrett, 2007) and learning analytics for assessment (Ellis, 2013; Knight et al., 2014).

According to Siemens (2004b), definitions of ePortfolios ‘generally include the notion of a digital resource (personal artifacts, instructor comments) demonstrating growth, allowing for flexible expression (i.e. customized folders and site areas to meet the skill requirements of a particular job), and permitting access to varied interested parties (parents, potential employers, fellow learners, and instructors)’ (Definition, para. 2). In making portfolios electronic, learners' digital literacies are being assessed along with other competencies.

Building on this, Clarke and Boud (2018) championed portfolio-based approaches that transcend the narrow confines of skill representation. They advocated for a more holistic evaluation of authentic literacy practices. Digital portfolios, in particular, offer students the opportunity to chronicle their learning journey over time, compiling artefacts, reflections and feedback that together paint a picture of

their multiliteracy development. In this context, the careful curation of portfolio collections serves to highlight specific learning objectives and visibly demonstrate growth. These assessments can also place students at the helm of the assessment process, fostering their self-direction within their authentic learning contexts. Moreover, they can foster rich feedback dialogues between students, their peers, and teachers, creating a space for ongoing communication (Nicol, 2010). This formative approach facilitates the identification and rectification of knowledge gaps.

An important, parallel development with digital assessment in recent years has been the rise of learning analytics (LA). This is a nascent field, defined by Siemens (2010) as 'the use of intelligent data, learner-produced data, and analysis models to discover information and social connections, and to predict and advise on learning' (What are Learning Analytics? (LA), para. 1). Dawson and Siemens (2014) suggested employing learning analytics techniques to discern patterns in behaviours associated with digital literacies. These patterns can be gleaned from traces of online participation, and data mining techniques can illuminate competencies such as collaboration and enquiry. They have proposed possible metrics that may be used to evaluate new literacies; for example, experimentation may be evaluated through the diversity of user interactions in online games, role-playing or simulations.

Importantly, LA techniques are increasingly utilising artificial intelligence (AI) methods such as machine learning and data mining to analyse educational data (Alfredo et al., 2023). AI enables more sophisticated analysis of complex datasets to provide personalised and adaptive support, recommendations, and insights. For instance, AI can track student behaviours over time to model knowledge, skills, motivations and metacognition. AI also facilitates the automation of some assessment and teaching tasks, allowing LA systems to take actions based on analytics. Overall, AI integration expands LA systems' capabilities to understand and respond to educational contexts while aiming to support human-centred goals. The

connection between LA and AI highlights an overlap between these research communities in leveraging data and algorithms to enhance education.

Another intriguing proposition is the application of game-based assessment (GBA). In the systematic literature review by Gomez et al. (2023), the distinction between gamification and game-based assessment (GBA) is delineated. Gamification is characterised by the integration of game design elements into non-game contexts, employing isolated components of games rather than complete games, to enhance engagement and motivation. Conversely, GBA refers to the use of fully-fledged games specifically crafted to assess players' skills and knowledge, with players' interactions within the game environment serving as direct evidence for assessment. Tools known for gamified learning, such as Kahoot and Duolingo, fall under the category of gamified assessments—they incorporate game-like elements but do not constitute GBAs. This delineation emphasises that GBA is a more immersive and comprehensive approach to assessment, harnessing the complete game experience to derive measurable outcomes of players' abilities.

GBA can utilise interactive virtual environments to assess digital literacy practices through authentic challenges set within virtual contexts (Beavis et al., 2015). As students demonstrate their competencies in these simulated scenarios, the multidimensional aspects of literacies are brought to the fore. Gomez et al. (2023) analysed 65 empirical GBA studies published between 2004 and 2020 to understand current trends and challenges in this emerging field. Their review found that GBA is mainly used in K-16 education for assessment/validation purposes.

The approaches described above represent a shift towards constructivist assessment models, which Lankshear and Knobel (2011) advocate for as key to effectively capturing the multilayered essence of multiliteracies within their natural social environments. Understanding these approaches as possible co-existing pathways into the assessment of digital literacies paints a fuller picture of this educational landscape.

2.2 The role of formative assessment

Formative assessment is a key approach to evaluating student learning explored in this thesis. As mentioned, it has good alignment with new learning paradigms and the assessment of digital literacies. In this section, I will provide an overview of formative assessment and its potential role in developing digital literacies. I will also discuss feedback, a crucial element of formative assessment. Subsequently, the chapter will explore alternative assessment approaches to evaluating student learning.

Formative assessment

McNamara (2001) has urged assessment specialists to contribute towards the theorisation and conceptualisation of alternative forms of assessment, particularly in the classroom, for teaching and learning purposes. Interesting and important work in classroom-based (formative) language assessment has been done by researchers such as Rea-Dickins (2001), Leung (2004) and Hill (2012). Interest in learning-oriented assessment (LOA) (Turner & Purpura, 2016) has also taken root, further drawing attention away from large-scale, high-stakes testing. This conceptualisation of assessment prioritises learning over measurement, even when technically summative.

Within this tradition of classroom assessment, a prominent area of focus is formative assessment, which is characterised by ‘evidence about student achievement [that] is elicited, interpreted, and used by teachers, learners, or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken [otherwise]’ (Black & Wiliam, 2009, p. 6). Formative assessment (often synonymous with Assessment for Learning) is an ongoing, continuous process that takes place during instruction. It focuses on identifying strengths and weaknesses, monitoring learning progress, and guiding instructional decisions. It is often low-stakes and can take various forms, such as

quizzes, classroom discussions, observations and self-assessments. The primary goal of formative assessment is to support learning by providing timely feedback and opportunities for improvement. This focus has led to growing attention to this aspect of assessment literacies, particularly among teachers (Carless et al., 2006).

We can define formative assessment as the process within a classroom setting where information regarding students' learning progress is gathered, analysed and applied by teachers, students or their classmates. This informs decisions on subsequent instructional strategies, that would be less effective without such evidence (Black & Wiliam, 2009). Formative assessment is embedded in the learning process and aims to support and guide learning, while summative assessment occurs at the end of the learning process and focuses on evaluating the outcomes and making judgements about achievement. Formative assessment provides ongoing feedback and opportunities for improvement, while summative assessment provides a summary judgement of learning outcomes.

Formative assessment facilitates learning in several ways. Firstly, it provides learners with timely feedback on their progress, allowing them to identify areas of strength and areas that need improvement (Shute, 2008). This helps learners to adjust their learning strategies and focus on specific areas of need. Secondly, formative assessment promotes metacognition and self-regulation by encouraging learners to reflect on their own learning and set goals for improvement (Nicol & Macfarlane-Dick, 2006). This helps learners develop a deeper understanding of their own learning processes and become more self-directed. Lastly, as already mentioned, formative assessment informs instructional decisions, allowing instructors to adjust their teaching methods and provide targeted support to address learners' needs (Cauley & McMillan, 2010).

The significance of formative assessment in education was championed by Black and Wiliam in their groundbreaking 'Inside the Black Box: Raising Standards through Classroom Assessment' (1998), laying the foundation for understanding its profound

impact on student achievement. They highlighted the power of providing feedback, involving students in self-assessment, and using assessment to inform instruction. Their research demonstrated that formative assessment practices can have a significant positive impact on student learning outcomes. In their subsequent work 'Developing the theory of formative assessment' (2009), Black and Wiliam further expanded on the theory and practice of formative assessment. They discussed the rationale for formative assessment within a broader framework of pedagogy and highlighted its connections to other pedagogic initiatives, such as cognitive acceleration and dynamic assessment.

Continuing the trajectory of Black and Wiliam's research, Wiliam and Thompson (2008) presented a practical framework comprising five key strategies that further operationalised the principles of formative assessment: 1) Clarifying and sharing learning intentions and criteria for success, 2) Engineering effective classroom discussions, questions, and learning tasks that elicit evidence of learning, 3) Providing feedback that moves learners forward, 4) Activating students as instructional resources for one another through peer assessment, and 5) Activating students as owners of their own learning through self-assessment. These strategies provide guidance for teachers to integrate formative assessment into instructional practice. This framework offers a practical roadmap for realising the learning benefits of formative assessment, making it a valuable starting point. Research into how teachers can effectively implement these strategies, particularly leveraging technological affordances, can further strengthen formative assessment literacies and practice.

Leung's (2004) examination of formative teacher assessment intersects with this area of inquiry by highlighting the advantages of formative approaches over traditional formal assessments. Despite active interest in formative teacher assessment, there are still significant gaps in our understanding and development of it, specifically in defining its nature and devising empirical methods to study it. Leung posited that

addressing these gaps necessitates a focused discourse and research to conceptualise formative teacher assessment adequately. He advocated for a discursive approach to empirically investigate classroom interactions, viewing them as fertile grounds for discerning how teachers and students jointly construct knowledge. He stressed that teacher knowledge, beliefs and willingness to embrace change are crucial, given that the efficacy of formative assessment is contingent upon teachers adopting a learner-centred stance. He also highlighted the challenge of infrastructure deficits and the importance of understanding localised practices through targeted analysis, which are essential for effective capacity building. Ultimately, Leung argued that both conceptual and empirical efforts are necessary to frame pivotal questions and deepen our comprehension of formative teacher assessment, thereby facilitating the professional growth needed to support this pedagogical approach.

More recent discussions of formative assessment have considered its use as part of a broader approach known as 'learning-oriented assessment' (LOA). Carless (2015) defined LOA as 'assessment where a primary focus is on the potential to develop productive student learning processes', which can be either formative or summative, as long as it promotes desirable 'learning dispositions and behaviours' (p. 964) in learners. As with formative assessment, LOA foregrounds the processes of learning. Leung's (2020) research highlighted the need to understand LOA from multiple perspectives including curricular contexts. Gaining student perspectives is especially important and requires collaborative research respecting local contexts. He advocated broadening assessment research perspectives to account for sociocultural aspects through situated, collaborative practitioner-research approaches involving teachers and students.

Research on language assessment literacies (LAL) that focuses on formative or learning-oriented assessment (Hamp-Lyons, 2017; Turner & Purpura, 2016) is a growing area of research. Hamp-Lyons and Green (as cited in Hamp-Lyons, 2017)

proposed a model of learning-oriented language assessment (LOLA), which is rooted in assessment for learning, and set in opposition to large-scale testing. They identified as a key feature of LOLA its inherent interactiveness. An important element of this, as in LOA and formative assessment, is ‘feedback as feed-forward’. In emphasising ‘feed-forward’, they make it clear that feedback must move learners forward (William & Thompson, 2008), through action taken by them. Fulcher (2021) similarly argued that the most critical validity criterion for LOA is evidence for change. He also listed seven practical skills for LOA:

1. task design for effective learning,
2. self- and peer-evaluation,
3. timely feedback,
4. effective teacher questioning,
5. scaffolding of performance,
6. lesson planning and classroom management for reflection, and
7. management of affective impact on learners.

(p. 40)

These seminal works have influenced educational practice and policy, emphasising the importance of formative assessment in supporting student learning and achievement. They have contributed to the understanding of how formative assessment can be used to facilitate learning and improve educational outcomes. However, limited research has examined how such practices shape the development of digital literacies specifically. This is a critical gap that the current study aims to address (RQ1).

Feedback literacies

In considering formative or learning-oriented assessment, feedback literacies can be regarded as a key concept, as quality feedback is central to formative assessment (William & Thompson, 2008). Feedback literacies can cover feedback from teacher to

learner, and from learner to learner, as well as self-feedback. Following Wiliam and Thompson's (2008) model discussed above, a feedback literate teacher could be considered to be not only able to provide feedback that moves learners forward, but also able to promote peer and self-feedback that does the same. Similarly, a feedback literate learner is able to make use of teacher and peer feedback to move forward, and provide feedback to peers and self to do the same.

Sutton (2012) viewed feedback literacy (at least in the higher education sector) as a kind of situated learning practice, and conceptualised it as possessing 'three dimensions: an epistemological dimension, i.e. an engagement of learners in knowing (acquiring academic knowledge); an ontological dimension, i.e. an engagement of the self of the learner (investment of identity in academic work)[; and] a practical dimension, i.e. an engagement of learners in acting (reading, thinking about, and feeding forward feedback)' (p. 33). The development of these dimensions depends greatly, he argued, on the social relations between teacher and learner. For example, the best feedback might be ignored by the learner if they sensed that the teacher did not care about them. Building on Sutton's work, Carless and Boud (2018) identified four aspects of feedback literacy: 'appreciating feedback; making judgments; managing affect; and taking action' (p. 1316).

While the models proposed by Sutton (2012), Carless and Boud (2018) predominantly concentrated on enhancing the feedback literacies of students within higher education, it is important to acknowledge that these models can—and indeed should—be applied to teachers, especially within the K-12 sector. In environments where pupils often demonstrate lower levels of self-direction, the role of the teacher in the feedback process becomes even more critical. Therefore, an examination of how these models can inform and shape the feedback literacies of teachers is warranted. Providing effective teacher feedback is a fundamental element of teacher education programmes, although its practical implementation in the classroom can be variable. Teachers must not only deliver high-quality feedback but also be adept

in fostering feedback literacies in their students—abilities that enable pupils to comprehend, engage with, and utilise feedback in a constructive manner. In their study of teacher feedback literacy in a Chinese university, for example, Xu and Carless (2017) defined feedback literacy as encompassing ‘three interconnected aspects: the role of feedback in developing student self-regulative capacities; strategies for supporting student cognitive development in understanding feedback and in generating useful feedback on one’s own and others’ work; and attentiveness to sociocultural, relational and affective aspects of feedback processes’ (p. 2).

More recently, Carless and Winstone (2020) elaborated on the framework initially put forward by Carless and Boud (2018) regarding student feedback literacy, by introducing a conceptual framework centred on teacher feedback literacy. This framework described teacher feedback literacy as encompassing the necessary knowledge, skills and attitudes required to devise feedback mechanisms that facilitate students’ engagement with feedback and foster the enhancement of their feedback literacy. Carless and Winstone delineated teacher feedback literacy into three principal aspects: design (the strategic planning of curricula and assessment tasks to help students recognise the value of feedback, cultivate the ability for evaluative judgement, and take responsibility for the application of feedback); relational (demonstrating emotional sensitivity and empathy during feedback interactions and establishing trust with students); and pragmatic (navigating the complexities arising from the diverse purposes of feedback, making informed decisions about how to allocate time effectively to impactful feedback, and managing the limitations while maximising the potential within the academic discipline).

Scholars have proposed various models of what they consider quality feedback. With reference to higher education, Nicol and Macfarlane-Dick (2006) proposed a model that foregrounds self-regulated learning, which they argue to be particularly important for learners in higher education (although an equally strong argument might be made for its importance for K-12 learners, e.g., the Singapore MOE’s case

for the similar concept of self-directed learning). The authors stated that 'good feedback practice:

1. helps clarify what good performance is (goals, criteria, expected standards);
2. facilitates the development of self-assessment (reflection) in learning;
3. delivers high quality information to students about their learning;
4. encourages teacher and peer dialogue around learning;
5. encourages positive motivational beliefs and self-esteem;
6. provides opportunities to close the gap between current and desired performance;
7. provides information to teachers that can be used to help shape teaching.'

(p. 205)

The focus on the learner's active role in feedback processes has been a hallmark of recent research on feedback in the higher education sector. Hounsell (2007) argued that feedback must be sustainable if it is to 'equip students to learn prospectively, in their lives and careers beyond graduation' (p. 103). For this reason, the MOE has promoted self-directed learning in K-12 schools so strongly; in the 21st-century, rapid technological advances require and enable lifelong learning beyond school.

With this repositioning of the learner in the feedback model, Carless et al. (2011) chose to use Askew and Lodge's (2000) definition of feedback as 'all dialogue to support learning in both formal and informal situations' (p. 1). Carless et al. identified in the feedback practices of excellent university teachers four characteristics of sustainable feedback:

1. involving students in dialogues about learning which raise their awareness of quality performance;

2. facilitating feedback processes through which students are stimulated to develop capacities in monitoring and evaluating their own learning;
3. enhancing student capacities for ongoing lifelong learning by supporting student development of skills for goal-setting and planning their learning.
4. assessment task design to encourage sustainable feedback needs to facilitate engagement over time in which feedback from varied sources is generated, processed and used to enhance performance on multiple stages of assignments.

(p. 405)

Alternative assessment paradigms

The significance of formative assessment in enhancing student learning and developing digital literacies serves as a foundation for considering alternative assessment paradigms. Whilst formative assessment emphasises ongoing feedback and self-improvement, alternative assessment paradigms extend these principles further by offering more personalised and contextualised evaluation methods. These methods, such as those recommended by Brown and Hudson (1998), which include conferences, portfolios, and self and peer assessments, not only provide continuous learning and reflection, but also aim to evaluate students' language abilities in ways that mirror real-world applications. Such paradigms shift away from discrete-point tests towards integrated language skills assessment, fostering authentic performance-based tasks.

Project-based learning, standing at the intersection of student-centred instruction and constructivist principles, can be argued to naturally align with the ethos of alternative assessment paradigms. This pedagogical strategy foregrounds context-specific learning, active student participation and social interaction (Kokotsaki et al., 2016). It is within this framework that project-based assessment emerges as an innovative and effective means to enhance student learning competencies. By

engaging students in practical projects, project-based assessment permits the exploration of ideas, skills, knowledge, and abilities in a hands-on manner (Kerti Nitiasih et al., 2023). These projects can encompass a suite of activities designed to measure competence within a structured timeframe, playing to the role of authentic and comprehensive assessment in evaluating both the processes and outcomes associated with project work (Izzah, 2021).

Project-based learning and its assessment methods can be seen as a practical application of alternative assessment paradigms. The focus on formative assessment techniques such as self and peer assessments allows for continuous improvement and deeper engagement. Additionally, the incorporation of authentic summative elements, like written reports and project presentations, ensures a holistic evaluation of student achievement. Building on the centrality of authenticity, we turn to the concept of 'indigenous assessment', introduced by Jacoby (1998). Indigenous assessment is grounded in tasks and criteria that are inherent to specific social groups, contrasting with the theoretical constructs typically found in conventional tests (see, for instance, Pill (2016)). Gee (2010) expanded on this idea by highlighting how social groups apply these indigenous assessments to newcomers, who, upon acceptance, incorporate these standards into their self-assessment practices. Davidson (2009) complemented these views by suggesting that peer assessment encapsulates the collaborative and participatory ethos of the digital era, aligning closely with Corneli and Danoff's (2011) concept of paralogy. This progression from traditional formative assessments to alternative and indigenous assessment strategies underscores a paradigm shift towards more dynamic, socially embedded and learner-centric approaches to evaluating digital literacies.

One perennial issue concerning collaborative work is that of measuring individual contribution. While it is true that many digital tools can track individual contribution to a peer production, this is not possible or practical for more long-term and complicated projects. In the latter case, peer assessment may be the only way, and

indeed the way it is done in the real world (Haythornthwaite, 2009) and therefore 'indigenous'. Self-assessment, crucial to lifelong learning, contributes to learners' development of their ability to conduct and evaluate their own learning, their development as self-directed (i.e., heutagogical, see Hase & Kenyon, 2007) learners, and their capacity to take responsibility for their own learning (K. Tan, 2007).

Despite the developments mentioned so far, there remains a scarcity of research into the social aspect of assessment practices (McNamara, 2001, 2006; Roever & McNamara, 2006). McNamara and Roever have argued that merely 'presenting convincing psychometric arguments and evidence around test use' (p. 210) is insufficient in pushing an agenda of assessment reform ahead. In McNamara's (2001) words, assessment practices are subject to competing validity, managerialist and teacher/learner demands. The social-situatedness of assessment practices has been noted by researchers such as Broadfoot (1996) and Filer (2000), working in educational assessment.

To summarise, this section reviewed conceptual developments in formative assessment, noting key contributions in distinguishing it from summative assessment and emphasising feedback, self-assessment, and using evidence of learning to adapt teaching. Alternative assessment paradigms framing learning as social and situated were also discussed. While formative assessment has gained significant research and policy interest in recent decades, much of the work has focused on conceptualising its principles and investigating its impact within traditional classroom contexts. It must be noted that considerably less attention has been paid to formative assessment of digital literacies despite their increasing prominence in education.

2.3 The role of teacher assessment literacies

This section examines key aspects related to teacher assessment literacies and their enactment in practice. It begins by exploring the evolution of the concept of assessment literacy and theoretical understandings that position it as a socially

situated practice. Models proposed by Xu and Brown (2016), Looney et al. (2018), and Pastore and Andrade (2019) are discussed, as well as language assessment literacy and its context-specific nature. The role of teacher identity and relationships in shaping educational processes like assessment is then presented. It is acknowledged that these individual factors interact within broader systemic contexts. As such, the impacts of high-stakes testing policies, infrastructure barriers, and school culture norms on limiting innovation are outlined. Collectively, the studies highlight the complexity of assessment literacies as influenced by individual teacher attributes as well as multi-layered institutional environments.

Teacher assessment literacies

The concept of assessment literacy was first introduced by Stiggins (1991), who drew attention to the importance of sound assessment practices in the classroom. While models of feedback literacy and assessment literacy have predominantly focused on delineating necessary competencies, recent research has prompted much more consideration of context. Just as NLS (e.g., Street, 1984) reflected a new, sociocultural perspective of literacies as socially situated practices rather than skills, we can speak of assessment *literacies* instead when viewed through the lens of social practice theory. That is, assessment practices and literacies are local and socially situated. For instance, Willis et al. (2013) defined what they term assessment literacies as ‘a dynamic context dependent social practice that involves teachers articulating and negotiating classroom and cultural knowledges with one another and with learners, in the initiation, development and practice of assessment to achieve the learning goals of students’ (p. 242).

While the key role of teachers in assessment has been acknowledged (Leung, 2004), as Stiggins (2010) pointed out, ‘assessment illiteracy abounds’ (p. 233). There have been various attempts to address this, through, for example, the development of different models of teacher assessment literacies. Key models highlighted here include the Teacher Assessment Literacy in Practice (TALiP) model by Xu and Brown

(2016), the Teacher Assessor Identity Model by Looney et al. (2018), and the three-dimensional model of assessment literacy proposed by Pastore and Andrade (2019). These models identify important components of assessment literacies such as knowledge, skills, dispositions, beliefs, experiences, and social-emotional attributes. A recent scoping review by Coombs and DeLuca (2022) outlined the evolution of major assessment discourses and called for an expanded conceptualisation integrating knowledge, professional contexts, and growth.

The **Teacher Assessment Literacy in Practice (TALiP)** model developed by Xu and Brown (2016) proposed a new conceptual framework for teacher assessment literacy called Teacher Assessment Literacy in Practice (TALiP). This framework reconceptualised teacher assessment literacy as a dynamic system involving the interplay of six components: knowledge base, teacher conceptions, institutional/socio-cultural contexts, compromises made in practice, teacher learning, and teacher identity as assessor. The framework moves beyond just focusing on assessment knowledge to considering how conceptions, contexts, learning, and identity shape how knowledge is enacted in practice. A key premise is that teacher assessment literacy involves constantly negotiating compromises amidst competing tensions from different components. The framework provides a holistic model that bridges educational assessment and teacher education perspectives. Xu and Brown suggested the framework can guide empirical research by providing entry points into studying different aspects of assessment literacy. They also outlined implications for policy and practice in both preservice and in-service teacher education and professional development.

Looney et al. (2018) introduced the concept of **Teacher Assessment Identity (TAI)**, aiming to take TALiP one step further by foregrounding the importance of teacher identity. TAI is constituted by teachers' knowledge, skills, beliefs, feelings, and perceptions of their role as assessors. It highlights the interplay of cognitive, affective, and role dimensions in teachers' assessment work. The identity lens

recognises the affective, dispositional, and emotional aspects of being an assessor, as well as how teachers view their assessment role and practices, aspects which shape how teachers enact assessment. The authors conducted a systematic review of self-report scales on teacher assessment literacy and identity, finding that existing scales focus heavily on knowledge and skills, with limited attention to affective aspects like beliefs and dispositions. They argued that TAI represents a more holistic conceptualisation that can inform future research and practice on developing teacher capabilities for quality assessment.

More recently, Pastore and Andrade (2019) presented a **three-dimensional model of assessment literacy** encompassing conceptual, praxeological and socio-emotional dimensions. The model was developed through a Delphi study with international experts in educational assessment and teacher education. It moves beyond defining assessment literacy in terms of knowledge and skills to emphasising the contextual and identity aspects. The conceptual dimension covers assessment theories, purposes, methods, analysis, and reporting. The praxeological dimension involves enacting assessment in practice - from goal-setting to using data and communicating results. The socio-emotional dimension addresses managing social aspects like collaboration and ethical issues, as well as student emotions and engagement. The model aims to help teachers contextualise their assessment knowledge and practices. The model can be used to frame professional development and research on developing assessment literacy.

In Coombs and DeLuca's (2022) recent scoping review, the authors outlined the emergence and evolution of four main constructs related to teachers' classroom assessment capacities - assessment competence, literacy, capability and identity. They mapped out definitions, geographic and temporal trends, and interrelationships between these constructs in the literature. The authors found that assessment competence initially focused on technical assessment skills but has expanded to emphasise context-specific, high-quality practices supporting student learning.

Assessment literacy originated from standards defining knowledge and skills, but now recognises assessment as socially-situated. Assessment capability stresses learner agency and motivation. Assessment identity views assessment practices as shaped by experiences and professional identity. The proliferation of these overlapping constructs has created complexity in the field. Their analysis traced the distinct lineages, epistemologies and applications of each one. The authors concluded by calling for an expanded discourse on developing teacher assessment capacity, integrating knowledge, contexts and professional growth.

Within language assessment literacy (LAL), a more specific focus of AL concerning those engaged with second language assessment, Scarino (2013) took a similar view to Willis et al. (2013), and Xu and Brown (2016), in considering LAL to not only encompass language assessment knowledge and skills (as it is commonly understood), but also the ability to relate them to local contexts. She viewed these contrasting understandings as being rooted in the tension between the competing paradigms of traditional assessment and alternative assessment, with the former taking a more cognitive view of learning, and the latter being more closely aligned to sociocultural views of learning. She associated alternative assessment with the interpretative view of social science, whereby 'social phenomena are studied with a view to understanding "what people mean and intend by what they say and do and to locate those understandings within the historical, cultural, institutional and immediate situational contexts that shape them" (Moss et al., 2006, p. 110)' (p. 313). This paradigm allows for both assessment of, and for, learning (i.e., summative and formative assessment). We might therefore perceive a parallel association between the concept of (language) assessment literacies and that of alternative assessment, in that both are aligned to sociocultural perspectives.

Inbar-Lourie and Levi (2020; Levi & Inbar-Lourie, 2020) further elaborated on LAL, identifying it as a sub-category of general assessment literacy that necessitates specific knowledge and skills related to language assessment. This competency

includes designing, administering, interpreting, and utilising language assessments for varied purposes. LAL development is shaped by contextualised praxis, with teacher practices and classroom experiences informing conceptual models. They emphasised that effective LAL requires the integration of assessment knowledge with language pedagogical content knowledge. This proficiency involves skills such as selecting appropriate language assessment methods, utilising suitable grading procedures, interpreting scores and providing feedback. The authors stressed the alignment of LAL with current language learning theories to create meaningful assessments. However, systemic constraints like high-stakes exams can inhibit LAL development and application, and many language teachers lack basic LAL skills despite their assessment responsibilities. Continual evolution of LAL is encouraged through professional development, support and collaborative reflection tailored to local contexts. Inbar-Lourie and Levi argued that evaluating LAL based on standardised models is limiting and that localised practices provide greater insights into teachers' authentic skills. This is aligned with the view taken in this thesis that literacies are socially situated practices. To address gaps in teacher LAL, specialised LAL training and ongoing support are suggested as critical measures.

To summarise, the literature revealed the complex and multifaceted nature of teacher assessment literacies. Models proposed by Xu and Brown (2016), Looney et al. (2018), Pastore and Andrade (2019), and reviewed by Coombs and DeLuca (2022) emphasise the need to view teacher assessment literacies holistically encompassing knowledge, skills, beliefs, experiences and identities. Drawing on this understanding, the conventional understanding of LAL can be extended further to be reconceptualised not simply as a set of discrete skills, but rather as socially situated practices (language assessment literacies or LALs in the plural) that reflect the specific local contexts in which they are enacted. This sociocultural perspective acknowledges the profound influence of teacher practices, experiences, and the contexts themselves on the development and enactment of LALs. Researchers encourage the ongoing development of LALs through professional development

opportunities, reflection on local assessment practices and specialised training, despite systemic constraints. Notably, these models lack an emphasis on digital literacies, a gap which this study aims to address (RQ2). An expanded conceptualisation of LALs could not only integrate digital literacies, but also related cognitive, social and emotional dimensions.

Teacher identities and relationships

The multifaceted construct of teacher identity (addressed in the previous section) exerts a profound influence on teacher-student relationships, in turn shaping critical educational processes like assessment and digital technology integration. Elements of teacher identity, such as self-image, motivations, perceived roles and students' attitudes, evolve under the influence of personal and contextual factors (Beauchamp & Thomas, 2009; Pennington & Richards, 2016). Identity development represents a delicate balance between personal beliefs and external policies or constraints (Sachs, 2005), with factors like career stage, subject area, race and school leadership also playing significant roles (Bukor, 2015; Cohen, 2010).

The quality of teacher-student relationships is intrinsically linked to teacher identity. Relationships anchored in positivity, care and high expectations serve as catalysts for student engagement and achievement (Cornelius-White, 2007; Davis, 2006). A teacher's identity orientation shapes their perceptions of and responses to students (Beauchamp & Thomas, 2009). Supportive teacher-student relationships can boost student comfort, heighten motivation, and enhance self-efficacy during assessments (Rimm-Kaufman et al., 2015). Relationships marked by care and responsiveness pave the way for accurate diagnostic assessments and constructive feedback (Edelenbos & Kubanek-German, 2004). Furthermore, mutual respect and support within teacher-student relationships are instrumental in facilitating technology integration (Jaafar et al., 2021).

Rimm-Kaufman and Sandilos (2015) pointed out the transformative role of caring teacher-student relationships in promoting academic, social-emotional, and motivational development. They advocated for positive relationships imbued with sensitivity, warmth, and support to satisfy students' basic psychological needs, thereby encouraging academic risk-taking, deep learning engagement, and overall school success. Such nurturing ties are particularly significant for students facing adversity, emphasising the need for individual connections, social-emotional skill teaching, and a relationship-centred classroom climate. Key elements for effective assessment include rapport, trust and psychological safety (Edelenbos & Kubanek-German, 2004).

Positive teacher-student relationships foster a sense of psychological safety amongst students, enabling active participation and encouraging risk-taking during assessments. Such an environment, where students feel safe to express themselves and learn from mistakes, relies on strong teacher-student relationships built on trust, respect, and understanding. As discussed in [section 2.2](#), Sutton (2012) considered the development of feedback literacy as dependent on the social relations between teacher and learner. Meanwhile, Carless and Winstone (2020) argued that the relational aspect, including showing emotional sensitivity and empathy, is central to teacher feedback literacy. A positive classroom climate can be beneficial not only in face-to-face classrooms, but also online/hybrid ones (Goagoses et al., 2024). These perspectives underscore how successful teacher assessment in the digital age relies on interpersonal relationships that generate psychological safety for students within learning communities.

In sum, teacher identity is thought to mould teacher-student relationships, which, in turn, impact assessment, technology integration, psychological safety, peer bonding and risk management. Encouraging supportive teacher identities and relationships can have far-reaching implications for enriching educational processes and outcomes. However, there is a research gap regarding how teacher-student

relationships, expectations, and mindsets affect digital literacy assessment experiences (RQ4). This study seeks to shed light on this dynamic.

Systemic contexts and constraints

While teacher identity and teacher-student relationships affect all elements of classroom interaction, the broader school context also shapes technology integration and assessment approaches. School policies, norms and infrastructure limitations persist as barriers to effectively leveraging technology and new forms of assessment. Innovation within education, particularly concerning the integration of technology and the application of alternative assessments, is frequently constrained by high-stakes testing policies and pressures. This argument is substantiated by a series of studies that elucidate the impact of these policies on teacher autonomy and capacity for pedagogical innovation.

Au (2007) illuminated this through a qualitative metasynthesis, uncovering a strong inclination amongst teachers to align their instruction closely with tests under high-stakes testing policies (i.e., teaching to the test). This alignment, Au argued, curtails pedagogical autonomy and stifles innovation. The impact of testing pressures extends beyond curriculum alignment and instructional methodologies. Supovitz (2009) emphasised how testing pressures, coupled with restrictive curricula, limit opportunities for the sharing of successful alternative assessment strategies and the employment of innovative instructional approaches. This perspective is shared by Anagnostopoulos and Rutledge (2007), who demonstrated how sanctioning policies related to high-stakes testing often instigate superficial, short-term classroom changes, obstructing the potential for profound and enduring educational innovations.

The distortion of the educational process due to high-stakes testing is a theme echoed in the work of Nichols and Berliner (2007). They argued that an overriding emphasis on testing undermines the adoption of innovative teaching and alternative

assessment strategies, especially those involving technology. Similarly, Lipman (2004) highlighted how high-stakes testing negatively affects urban school reform. She noted that such testing often stifles innovative practices, hampers the integration of technology, and constrains the application of alternative assessment methods. Lastly, Au (2011) critiqued the so-called 'new Taylorism' (referring to a theory of scientific management developed by Frederick Winslow Taylor in the early 20th century that aimed to improve labour productivity by systematically analysing and standardising workflows) in education. He argued that high-stakes testing policies promote a standardisation of curriculum that restricts teacher autonomy, discourages innovative teaching practices, and limits the use of technology and alternative assessment strategies.

These studies highlight the ways in which high-stakes testing policies and pressures can limit teacher autonomy, discourage pedagogical innovation, and constrain the implementation of technology and alternative assessment practices. This is reflected in the policy-practice tension that often impedes assessment innovation and suggests the need for policy revisions to foster a more conducive environment. Inextricably linked to this challenge is the integration and effective use of technology in education, which is a complex process influenced by a variety of factors. Among these, the availability of resources such as devices, software, infrastructure and technical support in schools plays a crucial role.

Hew and Brush (2007) highlighted the lack of access to technology and issues with unreliable infrastructure as primary obstacles in K-12 teaching and learning; even when some level of technological resources are available, their effective use is often impeded by inadequate funding and support. This perspective is shared by Bauer and Kenton (2005), who also identified resource scarcity as a substantial barrier to technology integration, along with a lack of adequate training and support for teachers. Reinhart et al. (2011) argued that structural and resource limitations can

stifle even the most tech-savvy educators. Wachira and Keengwe (2011) revealed similar findings from the perspective of urban school mathematics teachers.

While the studies above focused on in-service teachers, Scherer et al. (2018) provided a unique lens into the experiences of pre-service teachers. They demonstrated that insufficient access to technology and infrastructure not only impacts current teaching practices but also has a direct and negative influence on the development of Technological, Pedagogical, and Content Knowledge (TPACK) (Koehler & Mishra, 2009) among future educators. Expanding on this, Ertmer et al. (2012) argued that a lack of resources can negatively influence teachers' beliefs and attitudes towards technology, thereby posing an additional barrier to technology integration in classrooms. Conversely, Vongkulluksn et al. (2018) provided a more optimistic outlook, suggesting that teachers who hold a high value for technology are often more determined and successful in overcoming these external barriers, despite facing resource challenges.

These studies emphasise the critical role of access to resources in the successful integration and use of technology in schools. They illustrate that resource scarcity not only hampers current teachers' abilities to integrate technology into their teaching but also impedes the development of necessary digital literacies among future educators. In tandem with the issue of resource access, existing literature has highlighted the role of school culture and teacher beliefs as crucial factors in the integration of technology. This suggests that addressing resource scarcity alone may not be enough for successful technology integration; concurrent attention must also be given to the sociocultural aspects of the school environment, and to reshaping teacher attitudes and beliefs about technology.

For example, Hew and Brush (2007) have also identified resistance to change and emphasis on tradition within school culture as major barriers to technology integration. They emphasised that addressing these cultural barriers is vital for successful technology integration and pedagogical innovation. This finding is echoed

by Judson (2006), who pointed out the dichotomy in school culture: a culture that values innovation and experimentation can facilitate technology adoption, while one that emphasises tradition and standardisation can hinder it. This dual perspective illustrates the important role of school culture in technology integration.

Vongkulluksn et al. (2018) shifted the focus to another critical factor: teacher beliefs about technology. They argued that fostering positive teacher value beliefs about technology integration is key to successful technology adoption, suggesting that professional development should explicitly address teacher beliefs, not merely focus on skill building. This perspective was reinforced by Ertmer et al. (2012), who found that even when teachers possess the necessary skills, negative beliefs and attitudes towards technology can still pose significant barriers. Kim et al. (2013) supported this viewpoint by demonstrating that teachers' beliefs about technology are strong predictors of their intentions to integrate technology into teaching.

These studies highlight the intricate interplay between school culture and teacher beliefs in shaping technology integration and pedagogical innovation. Systemic factors like high-stakes testing, restrictive policies, infrastructure gaps and traditional norms persist as challenges despite teacher efforts. Creating a supportive culture for innovation, and addressing policy and resource barriers are needed to enable meaningful technology integration and assessment advancements.

2.4 Teacher digital literacies

In classrooms where digital literacies are actively taught, learnt and assessed, teachers play a fundamental role in modelling and guiding digital practices to support students' academic and professional success (Alakrash & Abdul Razak, 2021). Their proficiency in utilising digital technologies for education enables them to effectively demonstrate digital literacies. Teachers who lack expertise in this area may struggle to support their students in cultivating their own digital literacies.

The TPACK (Technological Pedagogical Content Knowledge) framework (figure 3), developed by Koehler and Mishra (2009), is a theoretical model depicting the interaction between technology, pedagogy and content knowledge in teaching. The framework proposes that effective technology integration requires teachers to possess three types of knowledge: technological knowledge (TK), pedagogical knowledge (PK) and content knowledge (CK). TK refers to teachers' understanding of the capabilities and limitations of different technologies. PK refers to teachers' knowledge of effective teaching strategies and instructional methods. CK refers to teachers' deep understanding of the subject matter they teach.

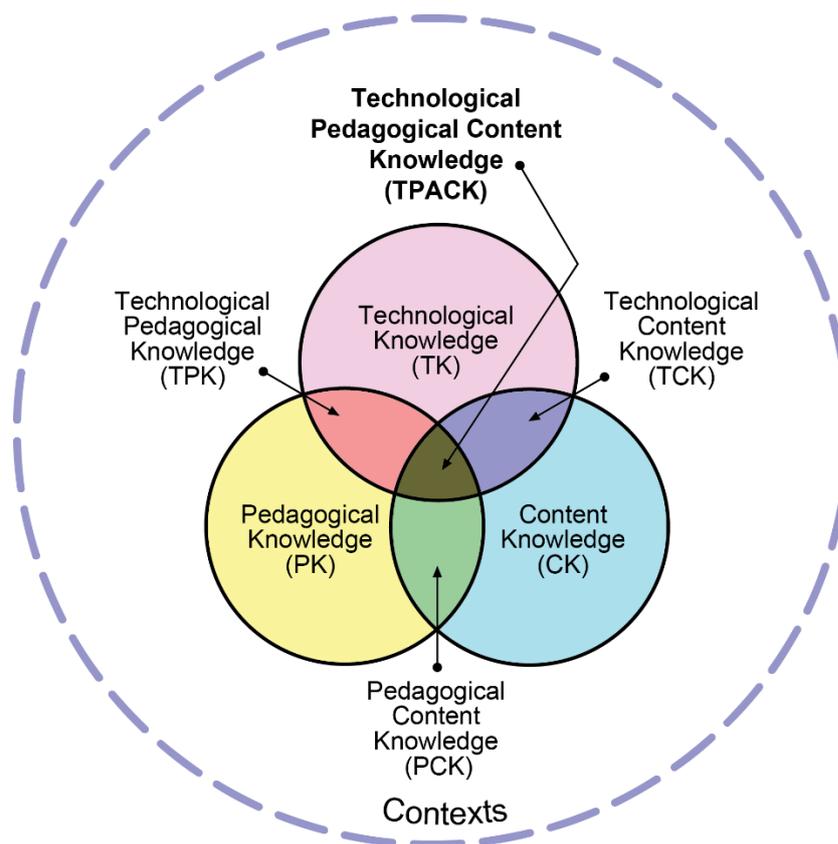


Figure 3 Technological Pedagogical Content Knowledge (TPACK). Reproduced by permission of the publisher, © 2012 by tpack.org

Koehler and Mishra (2009) maintained that technology integration in teaching should not be seen as a separate skill or add-on, but rather as a dynamic interaction between TK, PK and CK. The framework emphasises the need for teachers to develop

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a deep understanding of how technology can support and enhance their pedagogical approaches and content. Guided by TPACK, teachers can effectively leverage technology to create meaningful learning experiences, designing activities that align with content, utilise appropriate strategies, and enhance student engagement, collaboration and critical thinking. The framework has been widely used in educational research and teacher training to guide the development of teachers' technological pedagogical content knowledge. It has become even more relevant in light of the COVID-19 pandemic. Similarly, the significance of digital literacies among teachers has become even more apparent. The pandemic has accelerated the need for teachers to adapt to online and remote teaching methods, necessitating the development of digital literacies to effectively integrate technology into their instruction (AlAjmi, 2022).

The SAMR (Puentedura, 2006) model (figure 4) outlines four stages of technology integration in the classroom: Substitution, Augmentation, Modification, and Redefinition. At the most basic Substitution level, technology acts as a direct substitute for traditional tools, with no functional change. Augmentation involves technology that still substitutes for other tools but with functional improvements like efficiency or accessibility. Modification represents a significant redesign of tasks, allowing new activities previously not possible. At the highest Redefinition level, technology enables the creation of new tasks that transform and redefine traditional learning processes. The goal of the SAMR framework is to guide educators in moving along this continuum, leveraging technology to transform curriculum and instruction in meaningful ways, rather than just replacing analogue tools with their digital equivalents (i.e., 'old wine in new bottles'). Ultimately, it aims to enable the highest Redefinition level where technology facilitates creative new learning experiences.

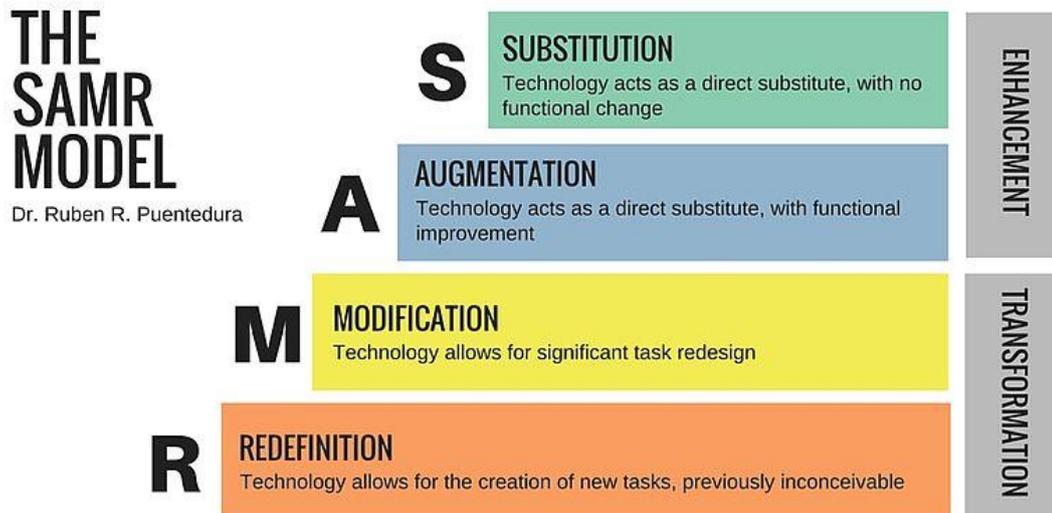


Figure 4 Substitution, Augmentation, Modification, and Redefinition (SAMR). Source: https://commons.wikimedia.org/wiki/File:The_SAMR_Model.jpg This file is licensed under the Creative Commons Attribution-Share Alike 4.0 International license.

The European Framework for the Digital Competence of Educators (DigCompEdu) (Redecker, 2017) (figure 5) proposed 22 elementary competences organised in 6 areas: Professional Engagement, Digital Resources, Teaching and Learning, Assessment, Empowering Learners, and Facilitating Learners' Digital Competence. At the foundational Professional Engagement level, educators use digital technologies for communication, collaboration, and professional development. The Digital Resources area involves sourcing, creating and sharing digital learning materials. Teaching and Learning focuses on managing and orchestrating the use of digital technologies in instruction. The Assessment area covers using digital tools for evaluation and feedback. Empowering Learners addresses using technology for differentiation, personalisation, and active learner involvement. At the highest level, Facilitating Learners' Digital Competence, educators enable students to creatively and responsibly use digital technologies for information, communication, content creation, wellbeing and problem-solving. DigCompEdu also outlined a progression model with six proficiency levels to support educators' competence development.

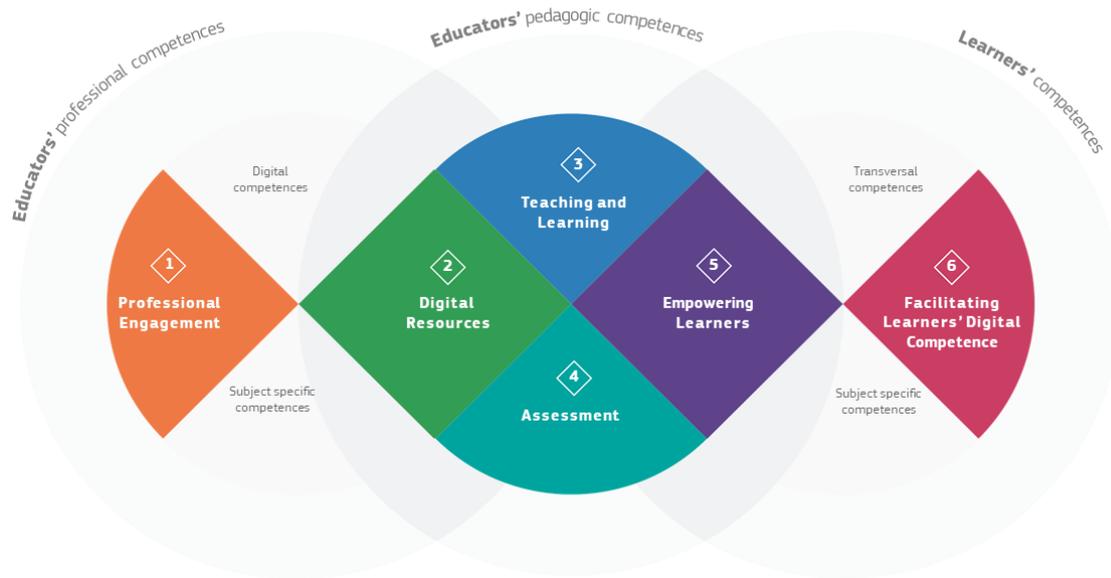


Figure 5 DigCompEdu areas and scope (Redecker, 2017)

Ertmer et al.'s (2012) research called attention to the significant influence of teachers' student-centred beliefs in implementing practices such as authenticity, student choice, and collaboration in their curricula, despite technological, administrative or assessment barriers. Their study highlighted teachers' beliefs and attitudes towards technology's relevance in student learning as pivotal to its success. Internal factors, like a passion for technology and a problem-solving approach, alongside support from administrators and personal learning networks, were key in shaping their practices. Conversely, negative attitudes and beliefs towards technology, and a lack of knowledge and skills, were identified as the main barriers for teachers. The study recommended refocusing professional development efforts on facilitating changes in teachers' attitudes and beliefs about technology in the classroom.

Also relevant to the prior discussion on teachers' identities is Burnett's (2011) argument that the connection between teachers' digital literacy practices and their professional identities is pivotal for explaining why some digital skills and attitudes transfer from personal contexts into classrooms while others do not. A teacher's sense of appropriate technology use is tied to sustaining their professional identity,

which varies across contexts, and poses risks when incorporating new literacies. She suggested viewing digital experience as a selective set of resources that teachers draw on to uphold or reshape professional identities. This contingent, identity-based perspective may explain why some teachers reject classroom digital practices while others reshape pedagogies. It reinforces the point that supporting teacher integration of new literacies requires moving beyond skills training to address issues of identity, risk, and the ongoing renegotiation of pedagogies and selves over time.

In Dujardin's (2012) view, however, in the digital age, educators need to develop a 'digital resident' identity (White & Le Cornu, 2011) to effectively mediate relevant aspects of digital culture for their students. She reflected on her own identity work to move from feeling like a digital 'outsider' to embracing digital residency, drawing on her long-term experiences with software. Developing this identity was essential to introduce innovations like classroom blogging, and required rethinking pedagogical approaches to facilitate participatory, community-focused learning. While this supported workplace reflection and student engagement, there were limitations in nurturing critical digital literacy. The author concluded that developing a digital resident identity was key for her educational innovations, but pedagogical design must move beyond personalised participation to nurture expanded sociocultural concepts of digital literacies. Tour (2015) arrived at a similar conclusion, her study showing that teachers' everyday digital experiences and mindsets carry into classrooms, influencing the learning opportunities they provide students. It suggested teacher education should critically examine mindsets and everyday technology use, to support pedagogical innovation and new literacy instruction.

In short, teachers play a vital role in developing student digital literacies, but many still lack the required literacies themselves. A significant gap exists in understanding how teachers' own digital literacies specifically shape their assessment capabilities and practices concerning their students' digital literacies. While the limited empirical research summarised above suggests a relationship between a teacher's digital

practices inside and outside the classroom, additional evidence is useful in evaluating the specific impact of their digital literacies on assessment practices, and this study aims to address this gap (RQ3).

2.5 Reassessing assessment literacy models

As already discussed, present-day assessment frameworks fall short when it comes to evaluating the digital competencies, social dynamics, teacher identity, and systemic elements that are crucial for 21st-century education. Dominant cognitive models, like Bloom's Taxonomy, tend to lay heavy emphasis on academic content knowledge, often overlooking areas such as digital literacies, social-emotional aptitudes, higher-order thinking and practical applications (Binkley et al., 2012). The rise of collaborative digital environments, which demand aptitudes like communication, teamwork, and digital citizenship, has not been sufficiently mirrored in assessments. These assessments seldom capture the intricate competencies required in such environments (Gikandi et al., 2011; Gleason & Von Gillern, 2018). Moreover, despite the influential role of positive teacher-student rapport in enabling personalised instruction, technology integration, and constructive assessment experiences, relational factors are often left in the periphery (Frisby & Martin, 2010).

Another often overlooked aspect is the teacher's identity, which considerably influences pedagogical approaches, technology integration, assessment practices, and professional learning needs (Beauchamp & Thomas, 2009). As discussed, recent models of teacher assessment literacies attempt to address this, but its impact may remain underestimated, particularly when it comes to the assessment of digital literacies. Similarly, it is worth noting that broader systemic factors, such as infrastructure, leadership culture and professional development, have a profound impact on learning ecosystems. However, these elements often remain sidelined when addressing teachers' assessment literacies, despite recognition that they matter. It is perhaps necessary to give more weight to this aspect, as they can make

or break the successful implementation of digital literacies assessment on a wider scale.

The development of holistic assessments necessitates a focus on the teacher's identity and the integration of digital literacies, social dynamics, relationships, and systemic factors into the assessment design. While current assessment literacy frameworks have made advancements in addressing these aspects, a case can be made to place more emphasis on the aspects mentioned, as they play a bigger role in the assessment of digital literacies than many would assume.

2.6 Conclusion

In conclusion, this literature review has explored key advancements and persistent challenges in assessing digital literacies, with connections to the research questions guiding this study. Previous research and theory-based work indicated that teacher formative assessment practices may impact on students' digital literacies development (RQ1), and specific assessment literacies are likely to be needed to translate this potential into classroom reality (RQ2). Teachers' digital literacies may potentially shape their assessment capabilities in such environments (RQ3), but supportive teacher-student relationships and mindsets could also influence assessment experiences (RQ4). Further research is required, therefore, to explore the multifaceted nature of these potential interactions within classroom environments where the assessment of digital literacies takes place. Progress has been made in conceptualising and evaluating digital literacies through promising approaches, but further research is required to develop effective, empowering assessment strategies that can be applied in practice. Central to this endeavour is understanding how educators implement pedagogical and assessment innovations, and tracing the influence of their understanding of digital contexts, their assessment expertise, and the systemic and relational elements in classrooms. For this reason, this study took the form of an ethnographic case study designed to reveal the

complex nature of digital literacy practices and their assessment in a situated educational setting.

Chapter 3: An ethnographic case study

This chapter outlines the methodology used in this ethnographic case study investigating the assessment of digital literacies in two secondary English language classes in Singapore. I explain the rationale for adopting an ethnographic case study approach and discuss key aspects of the research design, including participant selection, data collection methods (participant-observation, interviews, questionnaire and digital artefacts), data analysis procedures and ethical considerations. I also describe the online curation project that serves as the focus of the study. I address issues of research quality in qualitative studies, focusing on validity, generalisability and reflexivity in minimising researcher bias. Finally, I introduce an analytical framework adapted from the TALiP model to guide the analysis of factors influencing the classroom assessment of digital literacies. In the next two chapters, I present the findings from the two classes before drawing overall conclusions in the discussion chapter.

3.1 Ethnographic case study

I conducted an ethnographic case study focusing on two teachers, Yvette and Jen, who were working in the same school. The study took place over a period of four months in total, and involved observing Yvette and Jen's two secondary English language classes as they completed an online digital curation project, a small group task that their students were assessed on. A bounded case study approach was employed to provide an in-depth exploration of the assessment of digital literacies within the context of the project. Data was collected through participant-observation of lessons, collection of digital artefacts, semi-structured teacher and pupil interviews, and a pupil questionnaire. Thematic analysis was used to analyse the data with a focus on identifying assessment opportunities and applying Wiliam and Thompson's (2008) framework of formative assessment strategies.

Rationale for ethnographic case study

An ethnographic case study can be defined as an in-depth study of a culturally-situated phenomenon within a real-world case setting, utilising ethnographic fieldwork and multiple data sources to produce a rich contextual analysis (Fusch et al., 2017). As it possesses specific advantages in dealing with the intricacies of real-life contexts, it is thus a good fit for a study that views assessment through the lens of practice, and deals with change and innovation.

Case study is frequently utilised in applied linguistics research (Duff, 2014), and has become an established research method in published literature. In the field of language assessment, several researchers (e.g., Swain, 1984; Wall, 2005) have used a case study approach to explore specific topics, although not all have explicitly framed their research in these terms. In general, ethnographic case study is relatively uncommon in language assessment research. This is perhaps because language assessment research has tended to focus on testing, particularly large-scale testing such as IELTS or TOEFL. As mentioned earlier, McNamara (2001) called for more research into classroom-based assessment practices, and studies by Rea-Dickins (2001) and Hill (2012) exemplified ethnographic research of this kind. In addition, Watanabe (2004) reiterated Alderson and Wall's (1993) call for more ethnographic research in washback studies (e.g., Alderson & Hamp-Lyons, 1996). While Leung (2012) discussed qualitative research as a whole, his view can also be appropriately extended to ethnographic case studies in particular: by gaining insights into how teachers respond to and make decisions about assessment, we can validate the broader notion that a teacher's assessment practices are influenced by the specific local contexts in which they are situated.

VanWynsberghe and Khan (2007) highlighted case study's suitability regardless of research paradigm or discipline, defining it as 'a transparadigmatic and transdisciplinary heuristic that involves the careful delineation of the phenomena for which evidence is being collected (event, concept, program, process, etc.)' (p. 80).

Researchers in education, in a similar vein, view it as an approach to research, or a 'genre' (Elliott & Lukeš, 2008; Hamilton & Corbett-Whittier, 2012; Simons, 1996) 'that aims to capture the complexity of relationships, beliefs and attitudes within a bounded unit, using different forms of data collection and [which] is likely to explore more than one perspective' (Hamilton & Corbett-Whittier, p. 10). Simons (2009) similarly emphasised the multiplicity of perspectives, defining the case study as 'an in-depth exploration from multiple perspectives of the complexities and uniqueness of a particular project, policy, institution, programme or system in a 'real life' context' (p. 21).

There is also consensus that case study involves the examination of bounded unit or units (Merriam, 2009; Smith, 1978; Stake, 1995; Yin, 2014). Smith argued that the researcher, in designing case study research, should reflect on what the boundaries of their case are, and of what their case is an instance of. Gerring (2009) defined 'the case' more precisely as 'a spatially delimited phenomenon (a unit) observed at a single point in time or over some period of time' (p. 94). While the case was traditionally an individual person, it could as easily be a group or a community, depending on the researcher's initial research question(s) (Yin, 2014).

A case study approach possesses many other advantages for researchers. In writing about case studies, Stake (2005) argued that the qualitative researcher allows readers to arrive at their own interpretations and conclusions by providing sufficient descriptive detail. Stenhouse (1979), for instance, advocated the use of case study in researching education as it can capture complexities that positivist social science methods cannot. Simons (2009) pointed out its potential for 'exploring and understanding the process and dynamics of change' and its flexibility (p. 23). According to Merriam (2009), case study research has the special features of being 'particularistic, descriptive, and heuristic' (p. 43). Gerring (2009) similarly highlighted the usefulness of case study for generating hypotheses, its strong internal validity,

the insight it offers into causal mechanisms, and its depth of analysis. Adelman et al. (1976) summarised the advantages of case study as follows:

- A. case study data is 'strong in reality' (though challenging to manage).
- B. case studies permit 'generalisations' while still capturing the 'subtlety and complexity' of the case itself.
- C. case studies acknowledge the complexity and 'embeddedness' of social reality.
- D. case studies possess the richness of description that allows them to be used for future interpretations.
- E. case studies are 'a step to action' in that findings can easily be put into practical use.
- F. case studies are more accessible than other sorts of research reports.

Case study research is often associated (and contrasted) with ethnography, with both research traditions emphasising the importance of Geertz's (1973) 'thick description' (Stake, 2005). In writing about case studies, Stake argued that the qualitative researcher allows readers to arrive at their own interpretations and conclusions by providing sufficient descriptive detail (the aforementioned 'thick description'). Stenhouse (Skilbeck, 1983), one of the earliest advocates of case study educational research, distinguished clearly between the two approaches, stating that while case study might draw on ethnographic techniques, it is primarily based on documents (such as those resulting from interviews and observations) which benefit both researcher and participants. Other researchers, however, view case study research and ethnography to be neither synonymous nor mutually exclusive. Smith (1978) and Mitchell (1984) saw ethnography as integral to case study, with Mitchell noting that case studies differ from general ethnography only in the 'detail and particularity of the account' (p. 237), while Yin (2014) conceded that ethnographic methods may be employed in case study research. A useful compromise was presented by Hamilton and Corbett-Whittier (2012), who, having defined case study as a genre of research,

suggested that research methodology, such as ethnography, would be a separate consideration for the researcher.

Simons (2009) defined ethnographic case study as a 'type of case study [that] uses qualitative methods, such as participant-observation, to gain close-up descriptions of the context and is concerned to understand the case in relation to a theory or theories of culture' (p. 22). As I planned to use primarily ethnographic methods to examine two bounded units, namely two secondary English Language classes in Singapore over the course of a semester, my study would fit Simon's definition, especially as less time will be spent on site than is typical of 'full-blown ethnograph[ies]' (Wolcott, 2008, p. 178).

The choice of ethnographic methods for the present study was initially inspired by research in literacy studies (e.g., Heath & Street, 2008). Tusting (2013) summarised notable work of this kind, including research on digital literacies. While my study does not investigate literacies and language use in this sense, it does, as already mentioned, also use the lens of practice. As Schatzki (2012) asserted, in researching practices, they must first be 'uncovered' with ethnography, because there is 'no alternative to hanging out with, joining in with, talking to and watching, and getting together the people concerned' (p. 25). Trowler (2014), in discussing practice-focused ethnographic research, argued that 'hybrid methods' (i.e., multiple data collection and analysis methods) enable the researcher to 'access the multiple dimensions of social practice: saying, doing, relating, feeling, valuing' (p. 10). In taking the ethnographic perspective in my case study, I am choosing to take an epistemological stance that is in my opinion more compatible with social practice theory and research.

While this study is a qualitative one, it is worth pointing out that case study can involve quantitative methods (Stenhouse, 1980; Yin, 2014), even though like ethnography it is often classed as a type of qualitative research (Merriam, 2009). However, case researchers in general do not appear to subscribe to the qualitative-

quantitative dichotomy, and this is arguably one of case study's major strengths. Simons (2009) noted that not all case studies are purely qualitative (just as not all qualitative research is case study), a view shared by Yin (2014). Stenhouse went as far as to argue that case study should include quantitative data. Similarly, Yin did not view case study as a form of purely qualitative research, as it can include both qualitative and quantitative data, or even solely quantitative data. In considering case study in assessment research, it is worth noting that while quantitative research dominates educational measurement, educational research benefits from a balance of both research paradigms; Cronbach (1963) rightly points out that 'description of [course] outcomes... should be made on the broadest possible scale, even at the sacrifice of superficial fairness and precision' (p. 683). Blommaert (2018) made a similar argument for how surveys and ethnographies can be complementary in an age of rapid social change.

Evaluating qualitative research

Validity in the broadest sense is a concern of any research approach, though qualitative researchers such as Lincoln and Guba (1988) preferred to speak of credibility and transferability instead, since 'validity' can imply that there is a one 'objective' truth that can be arrived at. Yue (2010), writing from the perspective of case study research, accordingly chose to define validity as 'the extent to which a concept is actually represented by the indicators of such concepts' (p. 959). He discussed several different kinds of validity and their application to case study research: face validity, ecological validity, predictive and concurrent validity, measurement or construct validity, internal validity (credibility), external validity (generalisability or transferability), and convergent and divergent validity. He noted that construct validity is partly concerned with reliability, and is not directly applicable to qualitative case studies, although Lincoln and Guba's dependability (referring to whether the changes and shifts in the design and process of a naturalistic study are logical, traceable, and documented) is an analogous concept.

He pointed out that given the diversity of research methods in case study, it is impossible to accurately pin down how validity should be defined and assessed.

Stake (1995) cited Messick's influential concept of consequential validity, originating from the field of testing, as being an important one for case researchers. Messick (1989) considered consequential validity to be an important facet of validity that subsumes all other facets (construct validity, and relevance or utility). Consequential validity addresses the value implications of test interpretation and the social consequences of test use. McNamara (2006) argued that while Messick's validity framework is the most comprehensive in the field yet, major developments since then have largely failed to move the operationalisation of consequential validation forward. In applying it to case research, Stake emphasised researchers' 'ethical obligations to minimize misrepresentation and misunderstanding' (p. 109), a recommendation which has clear resonance with Messick's work.

In research such as this case study of classroom assessment of digital literacies, it can be said that consequential validity is relevant in two overlapping senses: the consequential validity of the classroom assessment used for digital literacies, and the consequential validity of the findings of this case study research itself. The former entails the fair evaluation of students' literacies and the appropriate use of such assessment outcomes to guide instruction, feedback and curriculum design. Misinterpretation can lead to negative educational consequences. The latter is tied to the impact of its findings on the wider educational field, with misrepresentation potentially resulting in misguided policies. In both contexts, consequential validity underscores the ethical obligation to minimise misunderstanding and misrepresentation, reflecting Stake's (1995) viewpoint.

Despite occasional mentions of generalisability in case study literature, it is not in the strictest sense of the term a concern for case researchers. As case studies typically involve a small number of participants, they cannot claim generalisability by virtue of large sample sizes. Moriceau (2010) defined generalisability in case study as 'the

ability of extending the validity of one's case study conclusions to other cases of the kind' (p. 419), and as such is similar to the concept of external validity. He argued that case researchers, in selecting alternative generalisation strategies, must align them with their ontological assumptions. However, he also cast doubt on whether case researchers should concern themselves with generalisability, when the trade-off is the richness of knowledge obtained. Stake (1995) maintained that case study is about 'particularization, not generalization' (p. 8). It works, he claimed, to refine or modify generalisations by counter-example, such that research questions might be modified or even replaced mid-study. Cronbach (1975), despite working in measurement (which, as quantitative fields do, tends to value generalisation), argued against privileging generalisation in research:

Instead of making generalization the ruling consideration in our research, I suggest we reverse our priorities. An observer collecting data in one particular situation is in a position to appraise a practice or proposition in that setting, observing effects in context. [...] As he goes from situation to situation, his first task is to describe and interpret the effect anew in each locale, perhaps taking into account the effect anew in each locale, perhaps taking into account unique to that locale of series of events (cf. Geertz, 1973, chap. 1, on 'thick description'). As results accumulate, a person who seeks understanding will do his best to trace how the uncontrolled factors could have caused local departures from the modal effect. That is, *generalization comes late, and the exception is taken seriously as the rule*. (pp. 124–125, my italics)

As he also pointed out, 'when we give proper weight to local conditions, any generalization is a working hypothesis, not a conclusion' (p. 125).

From the perspective of a qualitative researcher, Lincoln and Guba (1988) asserted that we should speak of transferability instead in qualitative research. Transferability depends on 'fittingness', which refers to the similarity between the two contexts.

The thick description of case studies allows readers to decide on the degree of transferability. Stake and Trumbull (1982) argued for the similar concept of 'naturalistic generalizations', which are generated from vicarious and direct experiences. In their opinion, attempts to effect changes in schools fail because practice is primarily guided by naturalistic, and not formal, generalisations. Case studies therefore possess an advantage in providing vicarious experiences for natural generalisations.

Simons (2009) also argued that case studies should exhibit transferability rather than generalisability. In listing six different forms of transferability, however, she kept with the common terminology of generalisation. She included in this list cross-case generalisation, naturalistic generalisation, concept generalisation, process generalisation, situated generalisation, and most importantly, in-depth particularisation. The last refers to the attempt to 'capture the essence of the particular in a way that we all recognize' (p. 167). Yin (2014), being more positivist-oriented, did not reject the importance of generalisability, suggesting that while quantitative studies allow for statistical generalisations, case studies offer analytic generalisations. He defined analytic generalisation as 'the logic whereby case study findings can extend to situations outside of the original case study, based on the relevance of similar theoretical concepts or principles' (p. 237), thus marking it as a kind of transferability as well. Having chosen case study as the approach for my research questions, I have inevitably privileged transferability over generalisability. I believe that in aiming for generalisability, I would risk losing sight of the social-situatedness of assessment practices, and thus the complexity of the case, resulting in an abstraction that is of limited practical application in the real world. I agree therefore that particularisation is a significant virtue of case study research, and vital for understanding my research context.

Given that generalisability is not particularly sought after by case researchers, it does not come as a surprise that neither is typicality. Regarding case selection, while

researchers coming from a more positivist paradigm may prefer to choose the more 'typical' case, case researchers in general do not share this preference. Simons (2009) advised against looking for the 'typical' case, pointing out that 'each case is unique so no one is typical of another' (p. 30). Stake (1995), too, argued that while a 'typical' case may work well, an unusual case can highlight matters we overlook in typical cases. He suggested that a case should maximise what we can learn. That is, we should choose a case that is accessible and well-disposed towards our research activity. Mitchell (1984) emphasised the importance of selecting a 'telling' case that highlights 'previously obscure theoretical relationships' (p. 239). Abramson, as cited in Merriam (2009), agreed, arguing that atypical cases are worth studying because they 'can help elucidate the upper and lower boundaries of experience' (p. 46).

Both Stake (1995) and Simons (2009) highlighted triangulation and member checking as two important validation processes. However, triangulation may be as problematic a term as 'validity' or 'generalisability' for some qualitative/ethnographic researchers, for similarly positivist reasons discussed above. Hammersley and Atkinson (2007) noted that different methods may yield contradictory findings, and it would be overly simplistic and confident to assume that simply combining data from various sources will necessarily yield a more accurate or comprehensive understanding. Some researchers also contended that the concept of triangulation imposes a positivist notion of validity onto qualitative research, which they argued is inappropriate (e.g., Flick, 2004; Silverman, 2021).

Thus, Denzin (1989) preferred to view triangulation as a strategy for achieving a richer understanding of the issue concerned, rather than a means to validate (in the positivist sense) findings. Similarly, Fielding and Fielding (1986) argued that different methods reveal different aspects of reality, not necessarily validating each other, but contributing to a more holistic understanding. Flick (2004) suggested that Denzin's four types of triangulation are useful in thinking about increasing understanding: data triangulation (data collected at different times or from different sources),

investigator triangulation (different researchers independently collect data), methodological triangulation (multiple methods of data collection), and theory triangulation (different theories used to interpret the same data). Simons (2009) pointed out that triangulation in social research is also concerned with the consideration of multiple, socially constructed, perspectives.

Member checking is done by obtaining the confirmation of a study's accuracy, adequacy and fairness from participants and other stakeholders, and does not necessarily presuppose that there is one objective truth to be uncovered. As Stake (1995) noted, even though the researcher's interpretations of the data are by necessity privileged, they should try to 'preserve the multiple realities' (p. 12). To Simons (2009), member checking is particularly important in that it mitigates the power asymmetry between researcher and participants. Member checking, though potentially problematic ethically and practically (as will be discussed later in [section 3.3](#)), can be critical in democratising the research process.

Reflexivity is also key to validity in case study. Begoray and Banister (2010) highlighted the importance of reflexivity in ensuring the 'quality/validity/trustworthiness of findings, in ethics and in addressing power imbalances' (p. 789). According to Simons (2009), to be reflexive is to consider the ways in which your 'actions, values, beliefs, preferences and biases' (p. 91) impact your research process and findings. This is crucial, she argued, because the researcher is the primary research instrument in a case study. Researcher reflexivity should be articulated throughout the research process and in the research report, for the benefit of both researcher and readers. Mauthner and Doucet (2003) reminded researchers that our research practices are shaped by our ontology and epistemology, and that in practising reflexivity, we should make such underpinnings explicit to ourselves and to readers. They rightly note that while the importance of reflexivity in the course of data collection all through to writing up is acknowledged,

the actual processes (particularly in analysis and interpretation) are more rarely discussed. In this thesis, I attempt to describe these processes more explicitly.

3.2 Ethical issues

Ethics in qualitative research has several dimensions. Simons (2009) provided a thorough discussion of the ethics involved in conducting case study research, emphasising the importance of establishing and maintaining trust with participants. She explained that she is guided by a set of democratic principles and procedures that 'accords equal treatment to individuals and ideas; establishes a flow of information that is independent of hierarchical or powerful interests; [and] maintains that no one has the right to exclude particular interests and values' (p. 102). She also discussed important ethical issues of informed consent, giving voice and participant control, and confidentiality and anonymisation (which she maintained should be treated separately). With regard to my study, I address participant privacy, consent, data security and disclosure in this section. The related issue of reflexivity and researcher bias is discussed in [section 3.4](#).

The 'thick description' of qualitative research, while 'preserv[ing] the multiple realities' of the case (Stake, 1995, p. 12), paradoxically also creates an ethical conundrum. How can we promise anonymity to participants and yet give a description so rich as to potentially make them identifiable? Davies (2008) pointed out that while the use of pseudonyms and other standard practices work to some extent, informants might still be identifiable from direct quotations, at least by those close to them. I can imagine this to be a challenge in my study, given the small local population and the centralised nature of the Singapore school system. There is an unspoken expectation that teachers as civil servants refrain from expressing any view that may be construed as being critical of the government and its policies. An even greater source of concern for me is keeping the views of pupils confidential, given that the power relationship between teacher and pupil is inherently unequal. At the stage of member checking (discussed below), for instance, a teacher who knows their

class well may well be able to identify pupils from their quotations. Davies advocated that promises of confidentiality should be realistic and made cautiously, and I agree that this is the most ethical course of action, even though participants may as a result be more circumspect when speaking than we would wish. In my participant consent forms (Appendix C), I promised that the names and school will remain confidential, something which is within my power to do, unlike any promise that they would not be identifiable by other means.

According to O'Reilly (2012), full, informed and meaningful consent is sometimes not easy to obtain. Explaining one's research fully might increase reactivity (i.e., the influence of the researcher on the researched), for instance. In my study, this was a concern when explaining it to the teachers involved, especially as one of them (Jen) was a trained researcher herself and familiar with the field. Being that my first conversations with her about my study were as a friend, it was never entirely possible to avoid reactivity. My strategy was therefore to try to minimise this by adopting an empathetic stance in my discussions with Jen (as well as other participants). I did this not only in self-interest (i.e., maximising the validity of my study by minimising reactivity), but also in keeping with the emic perspective in qualitative research. I kept initial thoughts about the data, such as those I would record in my fieldnotes and memos, vague in our conversations (including our interviews), since they were impressionistic in any case.

Participants might also not fully understand what they are consenting to, or even feel that they are not in a position to refuse consent. In my study, this might have posed a particular problem for the pupils involved, especially as it concerned assessment, which is a particular source of pressure for pupils in a test-driven system. In obtaining consent from them, I stressed that the study would have no bearing on actual marks and grades. In the consent form, I stated that their 'participation (or refusal to participate) will have no influence on [their] studies or final grades' and this was emphasised when I briefed them face-to-face on the study.

Data security is more complex in the age of digital storage. Due to the nature of the study, as well as my personal approach to research (which takes advantage of the affordances of digital technologies wherever possible), practically all of the data were collected and then stored digitally. To guard against data loss, I not only backed the data up to local storage but also to the cloud. Cloud storage is reasonably reliable and also allows the researcher to access synced data from multiple devices and locations. It also carries security risks; for example hacks and vendor snooping. While there is no way to absolutely guarantee security however data are stored (in the cloud, on a local disk, or in a locked cupboard), I took whatever practical measures I could to ensure secure cloud storage. The bulk of my data (audio files and artefacts) are stored on the cloud service Tresorit (tresorit.com), which is one of the most secure available. Logging in to my account requires not only the password (which is a strong and unique password stored only on my similarly secured password manager app with a Two Factor Authentication (2FA) code). To access my password manager app and 2FA app, it is also necessary to log into one of my digital devices, all of which are secured with a password or PIN. Tresorit also has end-to-end, zero-knowledge encryption, meaning that even the vendor is unable to snoop on my data.

My fieldnotes, which avoided the use of full names, were saved on Microsoft OneDrive (onedrive.live.com). Services such as OneDrive, Google Drive and Dropbox do not have end-to-end, zero-knowledge encryption, but the security of fieldnotes is arguably less critical. OneDrive is convenient as I use Microsoft OneNote (www.onenote.com), a notetaking app, on multiple devices to ink my jottings, type out my fieldnotes and conceptual memos, and record all other notes related to my study. Notebooks on this app are synced to OneDrive. My Microsoft account is 2FA secured. Artefacts on Google Drive (drive.google.com) were copied to my own 2FA secured Google account.

O'Reilly (2012) also highlighted the problem of disclosure. While it is generally good practice to share transcripts and field notes with participants for the purpose of

member checking, this should only be done if anonymity can be maintained. A more difficult dilemma is whether one should share findings with the participants if the participants are likely to object to them. O'Reilly concluded that research should be disclosed regardless, so as long as one avoids 'breaking confidences, risking anonymity or causing harm' (p. 67). While I believe that my research will be useful and empowering to my participants, I was wary of the teachers' reaction to the more critical aspects of my findings. Teaching is a stressful profession in Singapore, not least because of the recent increase in public scrutiny and criticism. The onus was on me, therefore, to establish a relationship based on trust and respect from the outset, and to make it clear that the study is intended to be mutually beneficial.

Regrettably, despite my initial plans, member checking could not be conducted in this study. An unexpected personal illness necessitated a long leave of absence, significantly delaying the data analysis phase and making it unfeasible to conduct member checking within a reasonable timeframe. Considering that member checking is most effective when performed promptly after data collection, while participants' experiences and responses are still fresh, it might have been advantageous to conduct member checking concurrently with data collection, using field notes and preliminary data.

3.3 The online curation project

The focus of data collection was an 'online curation project' that was conducted in both Yvette's and Jen's classes. Although I observed other types of class work during the data collection period, I chose to focus on the curation project for several reasons. First, although the curation project was a small group project that took up only 5% of pupils' English Language marks for the academic year, it was, significantly, the one assessment of the year that was not only digitally mediated, but which also explicitly assessed a digital literacy (i.e., online curation). Second, work on the curation project provided a regular theme throughout the lessons that I observed for both classes. Curation lessons were not continuous, but interspersed with other

topics, such as situational writing, in preparation for the final examination of the year (and also for N(A) Level and O Level examinations further down the road). Finally, the curation task represents a unique and challenging assessment activity where learners engaged with multimodal input and worked together to create a multimodal production. Although the data was collected some time ago, this task pre-empted the current interest in multimodality in assessment (e.g., Zhang & Yu, 2023), and comprised a novel approach to multimodal production.

The curation task was a group project intended to be completed within one academic term. The main aim of the task was to learn what curation is, develop a topic and ultimately curate online resources on the topic coherently on the app Storify. Jen, as the teacher in charge, planned the tasks, provided the teaching resources and wrote the assessment rubric (Appendices A and B). Unit plans were shared amongst the teachers on a Google Doc, but they were incomplete for this unit (possibly because they were already being shared in a different form on Edmodo, and/or otherwise communicated). The unit plan for the curation project can be found in Appendix A. Instructions and resources were written by Jen and posted on Edmodo for her pupils (figure 6). In most cases, Yvette copied these for her class. These provided a clearer picture of Jen's intentions as the designer of this unit. She did not, however, provide lesson plans, and she and Yvette approached lesson planning somewhat differently. Teachers also decided how pupils were grouped.

The description of the task is attached to the link. PLS NOTE: the mark will go into CA3 [Continual Assessment 3]

Instructions To Be Read Carefully: Your project Submission MUST include the following

1) Defining Curation - Essential Questions to ASK and OUR THOUGHTS / Reflection

- Thoughts must be based on your understanding of what curation is / why curate / why curation is considered a 21st century skill / literacy / relevance or significance to your learning / literacy

- Haiku Deck Presentation 20 slides X 20 secs each

- Annotated NOTES - clipped and annotated into EDMODO with LINK to edmodo page attached

2) Developing Good Search Skills: Why are search skills essential for curation?

- Create a GOOGLE DOCUMENT for this task. You should NOT only use written text BUT ALSO capture and ANNOTATE screen shots / diagrams / images and EXPLAIN what you have learned about GOOD search skills

- GOOD EXAMPLES should be provided on HOW - step by step procedure

- You can also INCLUDE any LINKS / VIDEOS BUT YOU MUST write your OWN thoughts on about the search skills - eg what essential questions you need to ask when searching for information? eg How do we evaluate the information - reliability, credibility , usefulness, value

- Use the link i have provided in my edmodo post on Google Search skills

3) Creating An Online Curation Topic

- Decide on an interesting topic / question to curate: Use questioning to unpack the essential questions so you can decide on a topic focus / theme / driving question to explore. You need to make SURE this DRIVING QUESTION IS SPECIFIC / SCOPE IS REALISTIC as you ONLY have ONE WEEK to do this. (CAPTURE the THINKING PROCESS on mindmaps - Mindomo / Mindmeister)

- COLLECT - Use DIIGO to collect interesting sites / articles / videos etc based on your search + annotate the sites with questions / thoughts / comments (notes to be used later).

- YOUR DIIGO ANNOTATION MUST show EVERY MEMBER actively asking questions to UNDERSTAND / TO SYNTHESIZE what they have read, to question the POV / PERSPECTIVE

or ARGUMENT presented in the source, to EVALUATE the INFO GIVEN (can think of whether this POV is BIASED, too narrow , not accurate etc)

- Use Storify (pls install extensions for chrome) to create a curation topic + select at least 5 of the links you have collected to be curated - you will need to EXPLAIN in YOUR STORIFY DOCUMENT your CRITERIA for choosing these links (audience / context / purpose/ reliability / usefulness of the source etc).

- Your Storify MUST have notes / comments / tags - curation is NOT just a collction of link.

- Brainstorm what criteria you will use to decide what is WORTH curating (you can refer to the links I have posted on what makes a good curation).

Your written reflection / comments MUST explain clearly the following:

- key ideas in the curated link

- interesting (define this) questions / POV / PERSPECTIVE the writer offers on the topic

-Questions that develop from reading/ viewing this

- How does this link 'answer' or provide a particular perspective about your driving question / topic / theme?

- How accurate / reliable / useful (think of other evaluation criteria) is this source of information?

4) Pls remember to SHARE all documents /links here and make sure it MUST be open for audience comments

Figure 6 Jen's curation project instructions to students, posted on Edmodo by both Jen and Yvette

In Jen's unit plan (see Appendix A), she explained the time frame, rationale and resources for Task 1, which was to introduce pupils to the concept of curation and assess them formatively with a performance task: pupils in their groups had to do a PechaKucha presentation (that is, using 20 images/slides, talk about each for only 20 seconds) 'about what CURATION is / why it is a valuable skill to learn, and how it relates to literacy skills'. There is also a Task 2: Building Good Search Skills, then followed by the Storify task. Her assessment rubric for the final task of curating a topic with Storify is a simple one with three criteria and three bands, but interesting in that it assessed the process of curation as well as the product (Appendix B).

Storify, a now-defunct social media platform, allowed users to curate information from various online sources into cohesive narrative stories. Key features included embedding content from different sources, automatic chronological arrangement of content, annotation capabilities, sharing options and collaboration tools. By leveraging publicly available content, and providing tools for curation and annotation, Storify enabled users to create immersive digital stories around specific topics or events, making it well-suited for teaching online curation skills to students. Fincham (2011) provided a review, complemented by an illustrative example as seen in figure 7 from McGuire (2014).

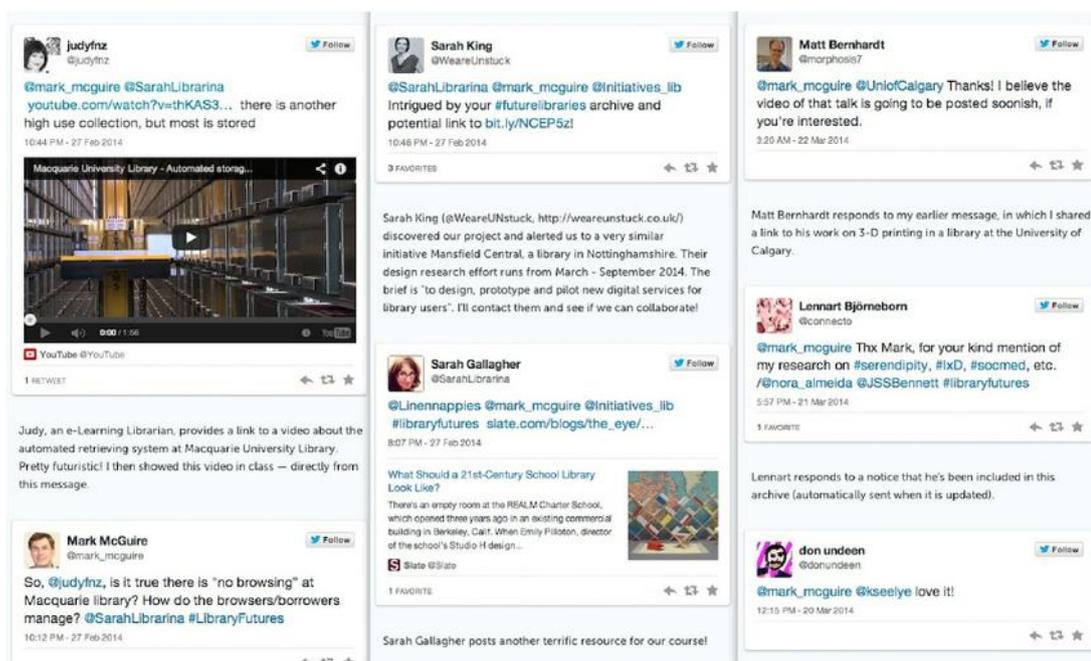


Figure 7 A selection from the 250 Twitter posts in the #LibraryFutures Storify archive (McGuire, 2014)

Edmodo was a social learning platform (reminiscent of Facebook) that enabled teachers to share content, distribute quizzes, assignments, and manage communication with students, colleagues and parents until its shutdown in 2022. It was widely recognised for fostering collaboration and facilitating the easy sharing of educational material.

3.4 Data collection

This section provides an overview of the data collection methods utilised in this ethnographic case study. Multiple sources of qualitative data were gathered, prioritising participant-observations of classroom lessons and teacher interviews. Data was collected over a four-month period focused on an online curation project conducted in two secondary school English classrooms in Singapore. Participant consent was obtained and ethical research principles followed.

This study received ethical approval from the Lancaster University Research Ethics Committee, ensuring it met ethical standards for educational research. Additionally, permission to conduct the research was obtained from the Ministry of Education in Singapore prior to approaching the school and participants. This approval from the relevant authorities was required in order to undertake the classroom observations and interviews with teachers and students in a Singapore secondary school. The participant consent forms can be found in Appendix C. Gaining these necessary permissions demonstrates adherence to ethical procedures.

As mentioned in [section 3.1](#), there is no one method (or methodology) that characterises case study. While quantitative methods are sometimes used, methods associated with ethnography and other qualitative methodologies are more common. According to Mitchell (1984), case study allows for any method of data collection, in order to produce as complete a picture of the case as possible. Simons (2009), however, emphasised that methods should be chosen based on the research questions, with consideration also given to one's epistemological stance. Researchers recommend a variety of methods. Stake (1995) listed observation, interview and document review as data gathering methods. Hamilton and Corbett-Whittier (2012) suggested observation (including participant-observation and more structured observation), participatory visual data, field notes, journals, interviews and questionnaires. Yin (2014) specified six sources of case study evidence:

documentation, archival records, interviews, direct observations, participant-observation and physical artifacts.

In this study I chose to collect the following data, over a total period of about four months (Figure 8):

1. Participant-observation of lessons (table 1), with audio recordings of teachers and three groups of pupils per class (about 5-6 in each group): 21 (about evenly split between the two classes, over a period of roughly two months)
2. Pupil questionnaire: 1 (40 respondents, at the end of the data collection period)
3. Digital artefacts: Not tallied (collected throughout the data collection period)
4. Teacher interviews: 6 (three interviews per teacher, roughly at the beginning, middle and end of the data collection period)
5. Pupil interviews: 8 (four pupils per class, at the end of the data collection period)

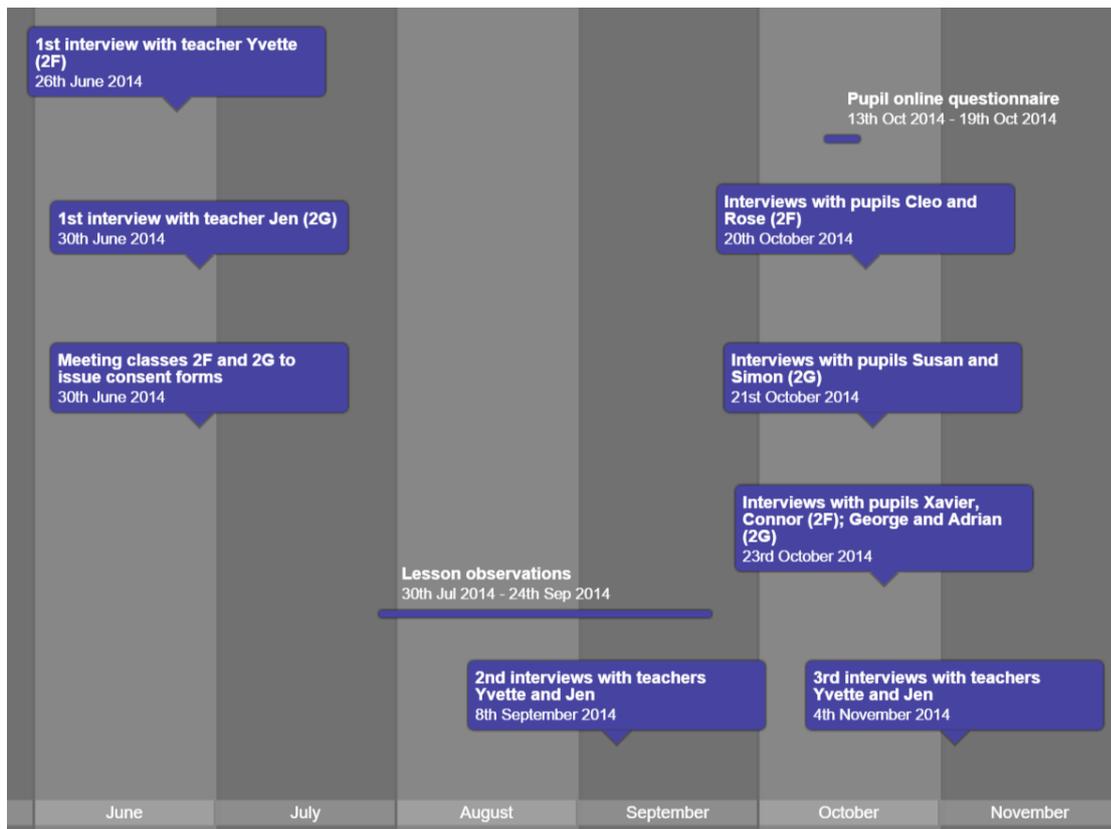


Figure 8 Data collection timeline (all names are pseudonyms)

Table 1 Participant-observation of lessons (non-curation lessons are omitted for brevity)

Obsevation	Date	Duration (in minutes)	Class/Teacher (Yvette or Jen)	Task
2	1/8/14	50m	2F/Y	Defining curation - Understanding curation (Introducing curation)
4.2	6/8/14	100m	2G/J	Defining curation - Understanding curation (Introducing curation)
5	7/8/14	50m	2G/J	Defining curation - Understanding curation (Exploring curation)
6.1	13/8/14	50m	2F/Y	Defining curation - Understanding curation (Introducing curation)
6.2	13/8/14	50m	2G/J	Defining curation - Haiku Deck presentation
7	14/8/14	50m	2F/Y	Defining curation - Understanding curation (Exploring curation)
8.1	20/8/14	50m	2F/Y	Defining curation - Understanding curation (Exploring curation)
8.2	20/8/14	100m	2G/J	Defining curation - Haiku Deck presentation
10.1	27/8/14	50m	2F/Y	Defining curation - Haiku Deck presentation
10.2	27/8/14	50m	2G/J	Defining curation - Haiku Deck presentation
11.1	3/9/14	50+50m	2F/Y	Curating a topic - Choosing a topic
11.2	3/9/14	100m	2G/J	Curating a topic - Choosing a topic
12.1	15/9/14	50m	2G/J	Curating a topic - Storifying
12.2	15/9/14	50m	2F/Y	Curating a topic - Storifying

I chose participant-observation as it is central to ethnography. Participant-observation may be defined as the ‘process of learning through exposure to or involvement in the day-to-day or routine activities of participants in the research

setting' (Schensul et al., 1999, p. 91). It allows the researcher to obtain access to the 'backstage life' of participants (de Munck, 1998, p. 41). DeWalt & DeWalt (2010) underscored its importance when they wrote that it forms the basis of other ethnographic methods such as interviewing. It contributes to the generation of new research questions, and improves the quality of the data obtained and the researcher's interpretation (p. 10). Unlike structured observation, which involves a preset observation scheme, the categories in (unstructured) participant-observation are generated from the data itself. The result is that unexpected observations are retained and contextual nuances can be included in the analysis, thus making it well-suited to the study of practices. Participant-observation normally entails, as in this study, transcribed recordings, extensive field notes, and subsequent analysis of both, all of which are very time-consuming, so very large datasets are not possible.

The observer continuum ranges from non-participation to complete participation (Spradley, 1980). Ethnographers such as O'Reilly (2012) have argued, however, that completely non-participant-observation is not actually possible, since we cannot be invisible observers; our presence, consciously or unconsciously, alters the dynamics of the situation to some extent, influencing the behaviours and actions of those being observed. Wolcott (2008) advised researchers to take the middle ground and participate actively only when it is necessary to obtain data. Even though researchers should aim to spend enough time with the observed for the latter to relax and let their guard down, he maintains that it is nevertheless undesirable, ethically speaking, for them to forget completely that they are being observed. In this study, I have in fact found it impossible for the participants to forget my presence, particularly given the presence of audio recorders.

Davies (2008) argued that the quality of participant-observation (and ethnography) is not a matter of the degree of participation, but rather of the extent to which researchers reflect critically on their participation, its appropriateness to the research context, and the relationship between researcher and participants (p. 74).

In her opinion, a high level of participation does not necessarily result in low reactivity (i.e., the influence of the researcher on the researched). Conversely, it is the quality of observation that affects the validity of the data. This echoes Hammersley and Atkinson (2007), who stated that '[a]ssuming we understand how the presence of the researcher may have shaped the data, we can interpret the latter accordingly and it can provide important insights, allowing us to pursue the emerging analysis' (p. 102).

With this view of reactivity in mind, I intended to adopt Hill's (2012) approach in her study of classroom-based language assessment. She employed what she refers to as 'moderate participant observation' (p. 54) - a mix of active and passive involvement - in an effort to minimise reactivity while still achieving an emic understanding of the classroom dynamics. I tried to keep my presence low-key; aside from wandering occasionally around the room to observe pupils working in their groups, I stayed in my seat to write my jottings for later translation into field notes. There were a few times I made my presence felt, such as when I checked that the recorders were running. On one occasion (discussed in Chapter 4), I informed Yvette quietly that students were using Google Sheets because they were not able to create tables on Google Docs as she had instructed. On another occasion, Jen threatened to check the student recordings when her class refused to tell her who had been noisy and disruptive in her absence, which would have reminded students of my presence. I had access to the students' groups on Edmodo, but the only time I posted anything was to request that students participate in my questionnaire.

While I had expected to collect many artefacts during the course of my study, the sheer amount of data that I had free access to took me by surprise. Jen shared planning documents, task sheets, etc. with the other two teachers and the Head of Department using Google Drive, so giving me access was a simple matter of adding my email address. Later, I was added as co-teacher to the class groups on Edmodo (www.edmodo.com), their social learning platform (operating similarly to a Virtual

Learning Environment). This gave me access to some of the online interactions amongst teachers and pupils, all the work submitted digitally, and the online feedback from the teachers. The pupils used a selection of online platforms, with Google Drive being the most common. While the digital nature of the artefacts made access easy, the volume made organising them somewhat challenging. I tried to save as much of these as I could on my own storage, and also took many screenshots. However, this is an imperfect solution because hyperlinks would no longer work; over time, some sites like Storify and Edmodo shut down, and it became impossible to view the artefacts in their original state. Some students also eventually deleted their work or removed my access.

Data loss and link rot (the decay of hyperlinks over time) present challenges for research that relies on digital resources. Data loss leads to incomplete datasets, hindering accurate conclusions and longitudinal studies that track changes over time. Link rot hampers reproducibility by limiting access to original sources and datasets, impeding verification of findings. Context is lost when encountering link rot, as understanding resources requires exploring related information. On hindsight, I should have worked out a more systematic way of saving and organising digital artefacts as I was collecting them. This experience highlights the importance of strategically planning for long-term digital data management and access early in the research design.

In line with my ethnographic approach, I employed semi-structured 'ethnographic' interviews, which may be described as interviews in the tradition of ethnography. According to Brenner (2006), ethnographic interviewing aims to 'understand the shared experiences, practices, and beliefs that arise from shared cultural perspectives' (p. 358). The work of Spradley (1979), and Werner and Schoepfle (1987) promoted the use of the 'grand tour' question at the beginning of an interview, so-called because it aims to elicit a broad description of the experience the interviewer wants to know about. This is the approach I have used in my interviews.

In most cases, I have also followed Brenner's recommendation to use an interview guide that groups questions by topic. This allowed me to cover necessary ground and yet keep the interview conversational in tone.

An important defining feature of the ethnographic interview is its co-constructed nature. Heyl (2007) noted that ethnographic interviews are characterised by a high level of rapport between interviewers and interviewees, owing to their 'respectful, on-going relationships' (p. 369). She advocated that the ethnographic interviewer, regardless of their discipline,

- listen respectfully,
- be aware of their role in the co-construction of meaning,
- understand that the participants, the interview process and the project outcomes are all affected by the on-going relationship between interviewer and interviewee and the broader social context, and
- recognise that the interview can only ever uncover partial knowledge.

Similarly, O'Reilly (2012) characterised the ethnographic interview as 'collaborative rather than interrogative' (p. 118). While an interview guide may be used, there is no expectation that it has to be adhered to strictly. By allowing the interviewee to shape the conversation, a better picture of their point of view can be obtained. Accordingly, I used my guides very flexibly, and added, skipped or rephrased questions in response to what I heard.

I interviewed the teachers each three times (refer to Appendix D for the interview guides). The first interview asked more general questions about their past and present assessment practices, their views on digital literacies and assessment practices they had planned for that semester. The aim was to obtain an overview of their assessment practices, from their individual perspectives. The second and third interviews were in essence follow-ups, with the third interview focusing specifically on the last assessment project (online digital curation).

The pupil interviews were structured similarly and also focused on the curation project, and attempted to elicit their views of the assessments. I chose to interview eight pupils; anymore would have generated too much data for me to handle, but I also feared that interviewing too few ran the risk of obtaining less useful responses, given that some pupils might struggle to express themselves. To help me choose the pupils, I administered a short and simple online questionnaire with mostly Likert items (using the app Typeform), but this proved to be more useful in eliciting more detailed responses during their interviews (if the pupil had responded). For instance, I could pick up on a response they had made in the questionnaire and probe further during the interview. My selection of pupil interviewees was eventually based more on the teachers' opinions and recommendations. I aimed to interview a mix of pupils who felt positively and negatively about the project, as well as a mix of strong and weak pupils. The table that follows (Table 2) gives an overview of the pupils interviewed, with profiles based on both my conversations with teachers and questionnaire responses (if available). While the balance is not perfect, it is fairly representative of the pupil participants in this study. However, I did not use this student data in the end in my analysis, as I chose instead to focus on the teachers.

Table 2 Profiles of pupil interviewees (all pseudonyms), based on teachers' comments

Class	Pupil	Profile
2F (Yvette's class)	Cleo	Has shown improvement (according to Yvette). Very negative about the project.
	Rose	(Unplanned interviewee; accompanied her friend Cleo and replaced pupil who did not show up.)
	Xavier	Has shown improvement. Bright but tends to be uninterested or disruptive, though this project is an exception.
	Connor	Has shown improvement. Very negative about the project.
2G (Jen's class)	Susan	Very weak in English Language. Neutral to negative about the project.
	Simon	Has improved a lot recently. Fairly positive about the project.
	George	Has presented outside of school, used to speaking. Quite positive about the project.
	Adrian	'Typical' N(A) pupil. Felt the project was tough because groupmates did not help.

I kept in mind reflexivity as the key to minimising researcher bias. Scott Jones (2010) emphasised that 'ethnographers must think through their prejudices, biases and how their subjectivity affects their work at all stages, whether planning, in the field or 'writing up'' (p. 24). While this appears to support ethnography's imperative to take the emic perspective, particularly when the researcher is an 'outsider', I would argue that reflexivity is crucial whether the researcher is an insider or an outsider. The dangers of 'going native' and 'overrapport' are real (Hammersley & Atkinson, 2007, p. 87), particularly when we seek realistic but potentially unpalatable solutions to problems. Even assuming 'insider' advantage, the distinction between 'insider' and 'outsider' is not a straightforward one, as Hammersley and Atkinson pointed out; an

insider researcher is an outsider in the community by virtue of her position as a researcher.

As I am not and have never been a school teacher, and do not work for the MOE, my 'outsider' status seemed clear. While this meant I had to work harder at the emic perspective, there were research advantages to being able to ask lots of questions freely without feigning ignorance. Participants could not logically assume that I took the side of school management or the MOE, for instance, which I hope enabled them to answer less guardedly. Certainly for the pupil participants, I would always be an 'outsider', in the sense of not being a teen pupil. The danger here was of being viewed as another teacher with authority and power over them. I believe though that my lack of experience as a secondary school teacher helped me project a less teacherly image.

However, as a teacher-educator who was once a lecturer at NIE and still maintained links with them, I was a partial 'insider', in that I had (different) insights into the workings of the education system. In hindsight, it was an advantage to have left NIE before going into the field, as there is a tendency to think that NIE and the MOE share identical agendas (even though the reality is far more complex). This status made my motives less suspect, while allowing me to establish myself as an expert who had something to offer the school in return. This something was a continuing professional development session requested by the school management, during which I confirmed that my teacher participants' perspective towards ICT and assessment was a minority one. Thus, even though I was unable to recruit more teacher participants, I could obtain first-hand evidence of the resistance my teacher participants would refer regularly to. At the same time, I was acutely aware that my critical view of the education system tends to colour my perception of both teachers and pupils; I personally felt that the traditionally exam-oriented school system in Singapore, with its strong washback effects, disadvantaged students (thus motivating this study). In my interactions, I was always conscious of the possibility of being less than respectful and empathetic to both teachers and pupils.

I aimed to maintain criticality while questioning my own assumptions and foregrounding the emic perspectives of the participants, in both data collection and analysis. This is notwithstanding that reflexivity should extend to the researcher's choice of and relationship with key informants (Davies, 2008), who were in this case Jen and Yvette. I recognised that it was precisely their own 'marginal' status (insiders as teachers but outsiders as non-conformist ones; in particular Jen who shares some of my background) that resulted in their participation in this study. While this made them ideal informants, it did mean that I had to be wary of mistaking over-identification with their perspectives for criticality. The management of my own marginality is thus as uncomfortable as Hammersley and Atkinson (2007, p. 89) claimed, but, as they also argue, the discomfort is an assurance to the ethnographer that she has positioned herself in the right space.

3.5 Data analysis

As noted above, the data collection methods generated much more data than I could feasibly process. To guide my analysis, I focused on data from participant-observation of lessons and teacher interviews as a priority, and drew on the rest (in particular, the artefacts) for 'confirmatory and contextual information' (Hill, 2012, p. 57). The data collection period included two assessment projects, but as I was only able to start when the classes were already in the midst of the first assessment ('project work'), I focused on the second assessment ('online curation'), which I was able to observe from beginning to end.

I also adapted Hill's (2012) unit of analysis, the 'assessment opportunity'. She defined this as 'any actions, interactions or artifacts (planned or unplanned, deliberate or unconscious, explicit or embedded) which have the potential to provide information on the qualities of a learner's (or group of learners') performance' (p. 76). I divided the lessons into stages of the curation project, and identified discrete tasks that the pupils were asked to complete as assessment opportunities. For instance, Yvette started the project with her class by asking them to answer focus questions (the first

assessment opportunity), and then by answering comprehension questions on a video about curation (the second assessment opportunity).

To analyse the teachers' formative assessment practices (RQ1), I used Wiliam and Thompson's (2008) five strategies of formative assessment. To summarise, the five strategies are:

1. Clarifying and sharing learning intentions and criteria for success
2. Engineering effective classroom discussions, questions, and learning tasks
3. Providing feedback that moves learners forward
4. Activating students as instructional resources for one another
5. Activating students as the owners of their own learning

By applying these strategies to the analysis of teachers' assessment practices, I aimed to gain a nuanced understanding of the formative assessment methods employed in the classroom, how these methods were integrated into the learning process, and how they contributed to students' learning outcomes.

To further analyse the data, I used thematic analysis (TA), as proposed by Braun and Clarke (2013), on transcripts of audio data of the teacher interviews. The authors defined it as 'a systematic approach for identifying, analysing and reporting patterns — themes — across a dataset... not tied to a particular theory' (Braun & Clarke, p. 178). While other researchers (Guest et al., 2012; Joffe, 2011) have outlined their own approaches to TA, I have chosen Braun and Clarke's as it is appreciably clear and systematic for a novice researcher like myself. The authors, too, recommended this method to inexperienced researchers. They also argued that their approach has 'theoretical flexibility' and uses 'an organic coding process' that de-emphasises inter-coder reliability (Braun & Clarke, p. 77). This makes it suited to the exploratory nature of this study.

There are six phases to Braun and Clarke's TA. They emphasised that this is a recursive, rather than a linear, process. I discuss here the phases as I have chosen to approach them in my study.

Phase 1: Familiarising Yourself With the Data

I transcribed audio data using orthographic transcription, with conventions adapted from Level 2 (Basic) of Du Bois's (2006) Transcription Delicacy Hierarchy (see Appendix E). I chose to omit overlaps and simplify backchannelling in my transcription for the sake of clarity. I also chose to transcribe the data myself as this is a good way to familiarise myself with the data, as Braun and Clarke (2013) pointed out. I read and reread the transcriptions for patterns, making notes as necessary.

Phase 2: Generating Initial Codes

Coding in TA can be 'data-driven' (inductive) or 'theory-driven' (deductive), or a combination of both. In an exploratory study such as this, I believe there is value in inductive coding. Using the CAQDAS (computer-assisted qualitative data analysis software) MAXQDA, I started with a combination of these inductive coding methods in my first cycle (Saldaña, 2013):

- Descriptive (word/phrase, usually noun, summarising the topic)
- Emotion
- Values (values/attitudes/beliefs)

I did this twice to ensure that I had not overlooked anything potentially significant (example: figure 9).

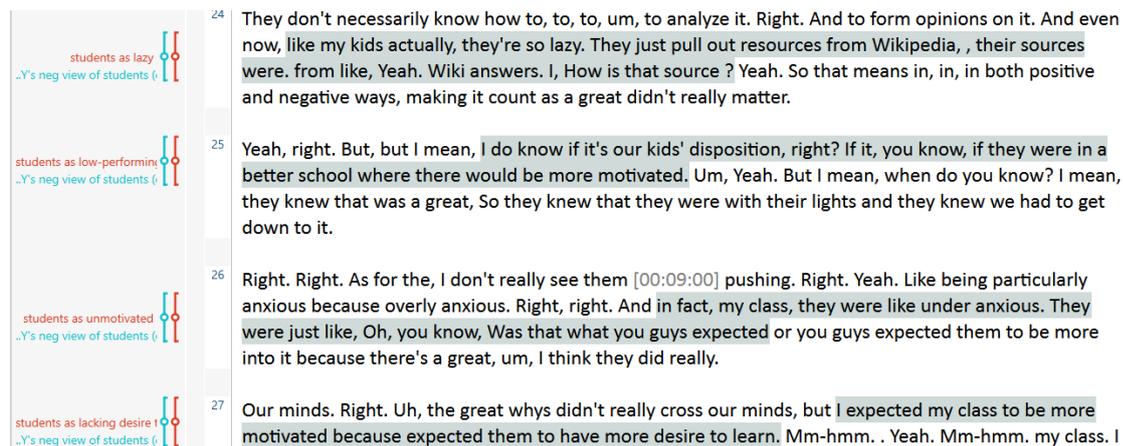


Figure 9 Coding one of the interviews with Yvette

Phase 3: Searching for Themes

Braun and Clarke (2006) emphasised that this is an active process, in that we 'generate or construct themes rather than [discover] them' (p. 63). At this point, duplicate codes were also merged. I was able to construct themes that seemed to explain why the two teachers differed in how they assessed their students' digital literacies in this curation project.

Phase 4: Reviewing Themes

In this phase, I read through all the coded extracts for each theme to check for coherence (example: figure 10). A few themes were renamed for clarity. I also checked the themes to ensure that they matched my overall understanding of the data so far.

Code	Preview
Y themes > Y's view of diglit	So for writing May, uh, we, we do like short pieces of writing,
Y themes > Y's view of diglit	she wanted the kids, we, or we wanted the kids to develop skill
Y themes > Y's view of diglit	group, group dynamics Oh, okay. And all that, which, which also
Y themes > Y's view of diglit	we tried exploring, I tried exploring Deigo my class. Right. The
Y themes > Y's view of diglit	I'm personally not a very digital person. Mm-hmm. , so, So I've
Y themes > Y's view of diglit	Like we are, we are always submerged almost in a, in a, in a se
Y themes > Y's view of diglit	And, um, I mean, all the things that Ppac still stays the same.
Y themes > Y's view of diglit	I think it's important for information. Right. Not knowing that
Y themes > Y's view of diglit	I think digital literacy is also understanding how they, um, li
Y themes > Y's view of diglit	so even with curation they might also want to think about with
Y themes > Y's view of diglit	What are the objectives? I think it goes back to our enduring u
Y themes > Y's view of diglit	what objectives do the curation project are, I think it will be
Y themes > Y's view of diglit	I think I would also wanna look for a platform that is easier t
Y themes > Y's view of diglit	like for for me I feel like the iPads a more tactile
Y themes > Y's view of diglit	Y 00:22 So when they when they do their map mind mapping and al
Y themes > Y's view of diglit	I was quite shocked because I went into my sec 1 lit class and
Y themes > Y's view of diglit	also to keep up with tech, I mean I'm not the most tech person,
Y themes > Y's view of diglit	Tech has never been a an interest of mine
Y themes > Y's view of diglit	I hated it
Y themes > Y's view of diglit	I was never into tech I was I'm always a pen and paper person e
Y themes > Y's view of diglit	this year is my foray into actually exploring what tech can do

Figure 10 Reviewing one of Yvette's themes

Phases 5 & 6: Defining and Naming Themes, and Producing the Report

Braun and Clarke (2006) explained these phases as telling the 'story' of each theme, and relating the themes to each other as well as to the overall 'story' of the data. The element categories came in useful here, as a way of organising the narrative. They emphasised that in telling the story of the data within and across themes, there must be sufficient evidence in the form of extracts, such that an argument can be made in answer to the research question. They warn against merely stringing together

extracts without a strong analytic narrative. The focus on the 'online curation' story may help to produce a stronger narrative.

My analysis for RQs 2-4 is presented using the framework shown in figure 11. This analytical framework is adapted from a simplification of the TALiP model. It further incorporates the digital aspects of this kind of assessment, and also draws on a preliminary analysis of the data collected in this study. This analysis synthesises data from observations and artefacts, and three interviews with each of the two teachers conducted pre-, mid-, and post-curation project.



Figure 11 Elements that affect the classroom assessment of digital literacies

In this chapter, I have outlined the methodology used in this study. I explained my rationale for adopting an ethnographic case study approach and discussed key aspects of research design such as participant selection, data collection methods, and data analysis procedures. In particular, I collected data through participant-observation, interviews, documents and artefacts to investigate the assessment

practices of two teachers for a digital curation project. I applied thematic analysis to code and categorise my data, focusing the analysis on identifying assessment opportunities and applying Wiliam and Thompson's framework of formative assessment strategies. In the next two chapters, I will present the findings from each case study - focusing on each teacher's class in turn - before drawing conclusions across the cases in the discussion chapter.

Chapter 4: Yvette's class

In Chapter 3, I described the curation project, an assessment task designed by Jen (the other teacher who participated in this study, see next chapter). As stated in Chapter 3, Jen, the teacher in charge, planned tasks, provided resources and wrote the assessment rubric (Appendix B) for the curation project. Unit plans were shared on Google Docs but were incomplete, with additional instructions and resources posted on Edmodo. Yvette mostly copied these for her class. However, Jen did not provide lesson plans, and this gave Yvette the flexibility of structuring her lessons differently. For instance, they did not always have identical activities. Teachers also determined their own student groupings. Thus, the analysis presented in this chapter provides insight into how Yvette – a relatively novice teacher – grappled with an assessment task she had neither encountered before nor planned herself: the curation project.

The chapter begins by presenting insights from an initial interview with Yvette, providing context on her prior experience with digital assessments and her expectations for the upcoming curation project. Next, it analyses classroom observations across the four stages of the project - Understanding Curation, Haiku Deck Presentation, Choosing a Topic, and Storify. Using a formative assessment framework, Yvette's practices are examined and key issues identified. The chapter then explores elements influencing her assessment practices, including her own digital literacies, assessment literacies, relationships with learners, and external constraints faced. It summarises the principal themes that emerged from observations, highlighting the complex interplay of elements that affected Yvette's ability to effectively assess students' digital literacies and achieve learning goals.

4.1 Insights from the initial interview

I'm personally not a very digital person. So I've gotten more digital over, over time.
Um, I've seen the benefits of, of using digital platforms in the classroom.

(Excerpt 4.1, Yvette, Interview 1)

As described in Chapter 3, I interviewed each teacher three times, before the project, during the project, and after the project. In this first section, I will present insights from my initial interview with Yvette. It is essential to understand Yvette's views of the project before it started, as this provides valuable context for understanding her approach and expectations. We can also gain insights into the potential challenges she anticipated. Furthermore, this information establishes a baseline against which Yvette's views in the subsequent interviews (see [section 4.3](#)) can be better understood.

In this first interview, which took place over a month before the first observation, I asked Yvette about her experience with past digitally-mediated assessments. Yvette explained that she and Jen had had two assessment tasks for their Secondary 2 classes that were digitally-mediated. The first was writing using Google Docs to prepare for their writing examination. The second was a digital project that ran over three terms, integrating English Language, Literature and History. While Jen's students seemed intrinsically motivated by the task itself, Yvette told me that her students tended to be apathetic despite it being graded, which was a source of disappointment for Yvette. While she had expected her students to have problems managing groupwork (which would be a learning experience for them), she had not expected them to be so disengaged.

Yvette also felt, at this point, that her students had difficulties managing their time efficiently and working independently. She sensed that her students just wanted easy answers (thus the tendency to turn to Wikipedia rather than considering other sources). She seemed disappointed in this initial interview that they lacked interest in learning. She was also puzzled that while exams normally motivated students to study (at least to some extent), the English Language, Literature and History project motivated her students less, not more (as she would expect it to).

Yvette saw this English Language, Literature and History project as being a good assessment, although perhaps she had not implemented it in a way that worked well for her class (perhaps more monitoring and handholding at the beginning would have helped, although time was a constraint). She identified student group dynamics (managing responsibilities,

deciding whether to stay with a group despite dissatisfaction) and their ability to be on-task as challenges for which she had no immediate solutions for the future. Her students also tended, in her view, to always choose the easiest option, and not seek her advice when she made time for them.

On being asked specifically about challenges she anticipated for the upcoming curation project, Yvette was very concerned about time constraints, especially as she would be expected to provide lots of individual consultations, as she had done for the previous project. The timing (term three) was a particularly busy time of the year because language teachers had to serve as examiners in the O-Level oral examinations in other schools, and she would have less time than usual for her students outside of class. Being able to give sufficient and timely feedback was clearly a concern for her, and she seemed conscious of not doing as well as she could (excerpt 4.2).

I think it'd be easier, like giving feedback. So I tend to give mass feedback. Because I'm not online all the time. Or I don't really want to work [all the] time. So that's my part *lah* I have to work on but yeah, giving feedback and timely feedback, and also constantly checking their work. Especially like, this is like an after school thing, then, you know. So it would be actually better to have like, two teachers manage this project...

(Excerpt 4.2, Yvette, Interview 1)

Her comment about not being online on time is interesting, in light of her admittance that she was not a very digital person, although she felt that she had improved in this aspect (excerpt 4.1). While it is certainly possible to be comfortable with digital tools and at the same time not want to spend every waking hour online (working or otherwise), this suggested that Yvette, as someone who was protective of her personal time outside of work, associated being online more with work.

Yvette's relevant experiences and concerns, as outlined above, revealed that she had specific expectations for the task, and anticipated specific performance and behaviours from

her students. These perceptions may influence her behaviour and reactions during the curation project.

4.2 Analysis of classroom observation and artefacts

In this analysis, I describe and analyse Yvette's classroom assessment practices during the curation project, to address Research Question 1 in part:

RQ1a: How do teachers' formative assessment practices impact the assessment of digital literacies?

As explained in Chapter 3, I conducted participant-observation in Yvette's classroom over a period of about two months. In this section, I describe key 'assessment opportunities' (Hill, 2012) from these observations, identifying what students were doing in the class and how Yvette responded. I divide my observations according to these four key stages of the curation task:

- Stage 1: Understanding curation
- Stage 2: Haiku deck presentation
- Stage 3: Choosing a topic
- Stage 4: Storify

(Jen's original instructions to students are reproduced in Chapter 3 (figure 6), and her unit plan for teachers is reproduced in Appendix A.)

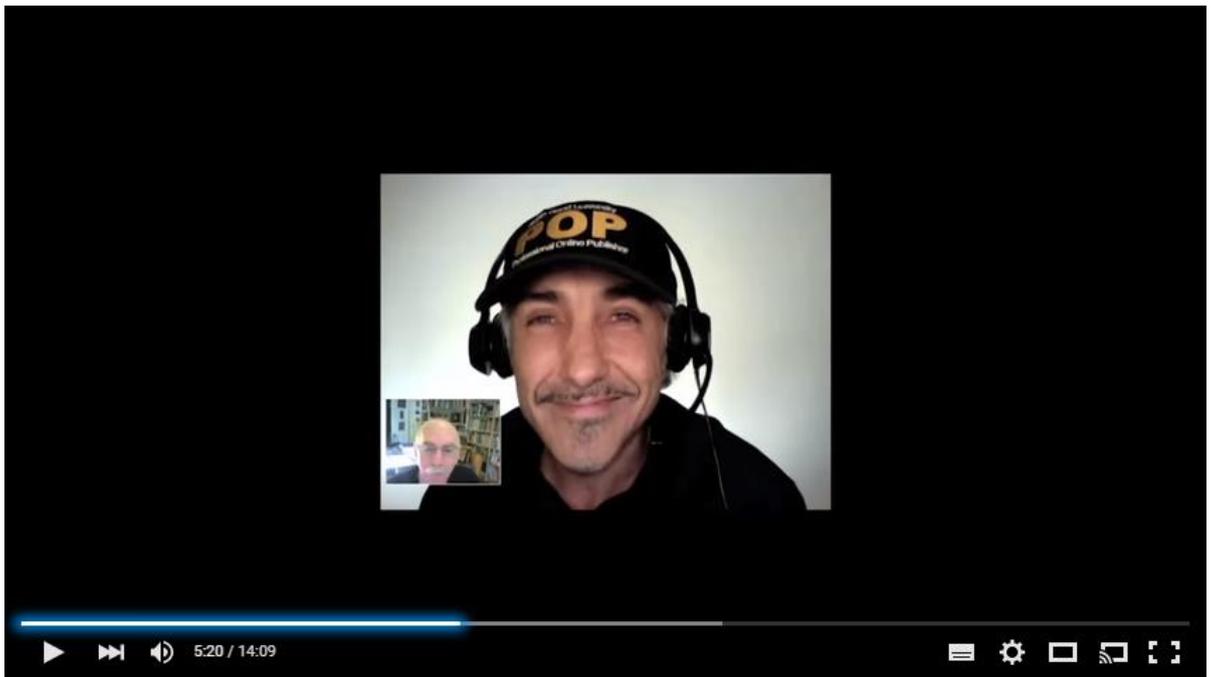
This section describes the practices observed and analyses them using William and Thompson's (2008) five strategies of formative assessment, as detailed in [section 3.5](#).

Stage 1: Understanding curation

The first stage of the curation task - Understanding curation – comprised two sub-stages: introducing curation and exploring curation. I will first describe the classroom activities in each sub-stage, and then describe Yvette's formative assessment approach.

Introducing curation

The first of Yvette's lessons on curation which I observed was actually her second. In the previous lesson, pupils had watched the video *What is Curation* (Percolate, 2012) and posted questions about curation on Padlet, a digital noticeboard. The link was shared on Edmodo, to allow access by her pupils and Jen. In this lesson, the class discussed three focus questions generated in the previous class: What is curation? Why do we need to curate? And how do we curate? They then watched a second video on curation, 'Robin Good on Good Curation' (Rheingold, 2011) (figure 12), and answered questions about it. In the next curation lesson I observed (12 days later), Yvette led the class in a discussion about the concept and process of curation; digital tools were not used in this lesson. These three lessons are part of Task 1 as set out by Jen in the unit plan (Appendix A).



Robin Good on curation



Howard Rheingold ✓

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30 0

Uploaded on 11 Jun 2011

In interview Robin Good, that master of new media (<http://masternewmedia.org>) about curation – what it is, what it requires, why it's important, how to do it.

Figure 12 YouTube video Robin Good on Good Curation (Rheingold, 2011)

There were three digitally mediated assessment opportunities, observed in the second lesson that will form the focus of this analysis:

- i. Answering focus questions: what is curation, why do we need to curate, and how do we curate? (1 August 2014)
- ii. Answering comprehension questions on the video by 'Robin Good' on Good Curation. (1 August 2014)
- iii. Answering discussion questions about the value of information (13 August 2014)

In assessment opportunity (i), Yvette projected the questions that pupils had

generated on curation and learning on Padlet in the previous class (figure 13). She then asked them – in plenary – why it was important to curate. The pupils were unable to answer her satisfactorily, so she gave the example of links and memes that they see on Twitter and Facebook. She asked them how they were able to find these links and memes again if they wanted to, and how curation could be helpful to the curator. As an example, she asked them about the importance of curation in project work, giving the example of the English Language, Literature and History project they had worked on in the previous semester. She tried to elicit answers about how they organised and curated the materials they collected then. Unfortunately, the students who were called on to answer said that they simply picked one that was ‘interesting’, an answer that Yvette deemed unsatisfactory (‘I’m talking to the wall again, as usual’). Yvette then gave them five minutes to discuss in their groups the answers to the three focus questions of what curation is, why do we need to curate, and how do we curate. Yvette asked her students to write their notes in their journals (this is a paper notebook each pupil kept), rather than digitally, even though they were sharing school iPads (usually two iPads to a group of 4-6), and to refer to the questions on Padlet if necessary.

As the groups discussed, Yvette monitored their progress, walking between the tables and warning pupils who she felt were off-task because they had not written anything in their journals, and giving advice to others. The three groups that I recorded did not discuss much among themselves during this activity (though admittedly they could have been put off by the recorders in this first lesson that I observed), and some confusion was evident over what the three focus questions had actually been. Group 2, in fact, asked Yvette a few times to repeat the questions, but she failed to hear this before the time was up. After about three minutes (not five) she stopped the class and asked two groups to share what they had found.

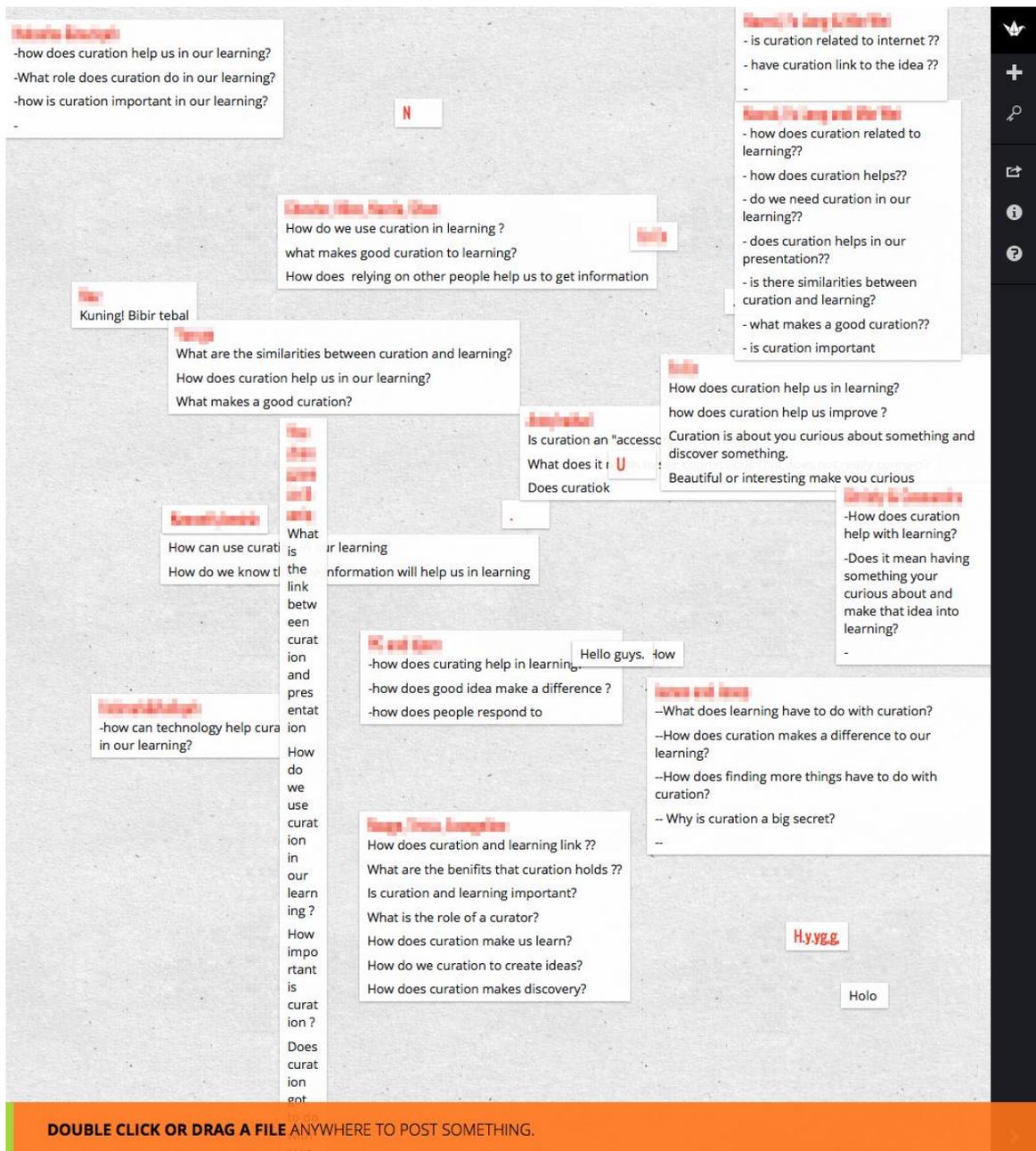


Figure 13 Questions about curation on Padlet, by Yvette's class. (last edit date 6 August 2014)

The pupil she called on told the class that they had gone to Google.com to find 'the blog of why you need to curate'. Yvette asked what they had typed in the search bar. The student said, 'why should you curate content'. The rest of the class laughed, so Yvette asked how many of them had done the same. When few students responded affirmatively, Yvette chided them for not making use of the iPads in front of them,

saying that ‘information is at your fingertips’. She emphasised that it is not embarrassing to look for information. She asked the pupil who she had called on initially what he had found, and why we curate. The pupil hesitated, and Yvette kept prompting him with very little wait time. She asked if he understood what he was reading and what he did when he did not. She suggested writing notes, trying to link the content, or looking for simpler websites. She reminded the whole class that they had been through this before, referring to the project conducted in the past.

Then, Yvette asked another group for their findings. A pupil answered that ‘it [curation] helps us learn’. Yvette asked how it did that. The pupil replied that it (referring to curation) collected all the information on the internet and found the ‘interesting’ information. Yvette tried to relate it back to their project work, saying that when they had gone to the library or the archives, if the information had not been curated, they would not have been able to find what they wanted. She emphasised that curation is not just about learning or collecting or selecting, but also about helping us organise. She offered an example of curating articles for their oral exam topics or themes, so that when they studied for the exam, they would know how to find them. Yvette explained that when they file information (on paper), they do it in a certain way so that they can find what they want. More than that, curation is about making connections between sources, like in history. At this point she stopped and asked if they understood, but there was silence. On the whole, students seemed to have problems conceptualising or articulating a definition of curation, despite Yvette’s use of analogies to help them relate it to more familiar contexts. As before, she was not satisfied with the answers.

In assessment opportunity (ii), which immediately followed the first, Yvette asked the class to take note of the analogy used in the YouTube video ‘Robin Good on Good Curation’ (Rheingold, 2011) (figure 12), before playing the video once. In this video, Howard Rheingold interviews Robin Good (real name Luigi Canali De Rossi), an acknowledged expert on content curation, via video conferencing. They discuss ‘what

[curation] is, what it requires, why it's important, how to do it'. In the section that Yvette played, Robin Good explains why curation is important, and what makes a good curator. The pupils had to identify the analogy ('This is like, you know, having been hungry and going to McDonald's. You know it's fast food information, but I want something more. Like when I go to a restaurant, I can choose the type of restaurant, the type of foods, the quality level, the type of customer service, and so on.') and use it to explain why quality matters in curation. Yvette then let slip, perhaps unintentionally, that the analogy was about McDonald's. As they discussed the analogy, pupils were allowed to ask further questions on Padlet if they wanted to. When Yvette called on a few pupils to answer after the groups had discussed for a few minutes, they struggled to answer. She then asked the class what the analogy used in opposition to McDonald's was (going to a restaurant was likened to content curation). This question was no easier for the students to answer, especially as there had been another analogy in the video ('The ultimate quality of a curator is like that of a DJ. I mean, what's the difference between putting on a mixtape and having a live DJ? I think those same qualities apply somewhat to a content curator') used later in the video. When Yvette asked about this analogy, which was used in opposition to the mixtape, there was further confusion as the pupils did not understand what a mixtape was. It also took about three minutes for Yvette to realise this.

When pupils were unable to explain why quality mattered in curation (a topic raised by Good when he compared Googling to fast food), Yvette took the opportunity to provide further explanation (excerpt 4.3).

You either log on to Facebook, you log on to Twitter or some kind of social media platform, for some of you it's Stomp, some of you it's SGAG and all these are considered information, don't think that they are not information they are considered information. Ok whatever that's why whatever nonsense #y'know# like junk food whatever nonsense you put into your brain, like you will spout nonsense *lah* because you know, you don't know how to filter

right? Ok? [...] But is it just one platform we're looking at? When we get information? Is it just one platform? Think back, ok, let's do something easy like the racial riots, right? Which were the platforms that reported on it, for example? Platforms. Is it just newspaper? Is it just the newspaper? Facebook, yes, what else, I mean Facebook people will post links. Yeah those are platforms that people post links. But there are different websites right? So you get different PERSPECTIVES right? Correct? Got it?

(Excerpt 4.3, Yvette, assessment opportunity (ii))

Pupils continued to display uncertainty and at this point Yvette appeared to become frustrated. Yvette clearly thought the uncertainty was due to lack of effort (excerpt 4.4). This occurred after repeated questioning about the restaurant analogy failed to elicit an acceptable answer from the pupils.

You all like to take things out of context. That means you hear what you wanna hear and then you don't build meaning[...]

You all have to listen, I'm really quite disappointed you know in the way you all you all understand information. It's not very difficult to understand.

(Excerpt 4.4, Yvette, assessment opportunity (ii))

The lesson ended at this point. On the whole, the lesson had not gone as planned, as the class had found the video difficult to understand and therefore was unable to glean from it what curation was about.

The subsequent lesson on curation that I observed was 12 days later (assessment opportunity (iii)), and again there was an opportunity for Yvette to assess the class's understanding through a discussion task. As usual iPads had been collected for the pupils, but as the pupils arrived late, Yvette decided not to distribute the iPads, citing the lack of time to set them up. As a result, this was not a digitally-mediated lesson. Yvette's aim was to go over curation again as she felt that the pupils were still

unclear about the concept. Yvette elicited the three keywords for curation: collect, select and organise, and cited some common examples of the practice of collecting, such as trading cards and stickers. From this, she moved to the collecting of information. She elicited the example of celebrity gossip from a pupil, and used it to raise the example of the comedian/actor Robin Williams's death, which had occurred the day before. She pointed out that her Facebook feed was full of articles on this topic, and that we need tools to help us save and organise news that comes in rapidly. She introduced Storify as one such tool, and asked the pupils to create an account each at home.

Yvette gave the class two questions to discuss:

1. Does all information have the same value?
2. How do we prioritise information (what is the criteria)?

At this point she brought up Pinterest boards as an example of curation for other people as audience, but most of the class seemed unfamiliar with them, perhaps indicating that Pinterest was not popular among this age group. Most students agreed that not all information has the same value. One student said that information or stories with moral lessons have a higher value. Another student said that stories that are 'crap' have a lower value. Yvette asked how one knew something is 'crap', pointing out that we can check its reliability (by looking at the source, etc.). She ended the lesson by summarising the concept of curation and relating it to the curation that would be done for a museum.

The observation above suggests that Yvette's initial attempts to introduce curation as a concept were not straightforward. Students did not grasp the importance of curation in the first lesson, and only came to understand its significance when Yvette tried to explain with more relatable examples. While Yvette was able to assess the students' understanding throughout these exchanges, and provided further feedback to steer the class towards a clear understanding, it is clear that some of the feedback strategies were affected by unclear audiovisual materials, a lack of shared

terminology and concepts (e.g., mixtapes, Pinterest), and a perception that students' non-response was due to a lack of effort rather than a misunderstanding of what was required.

Exploring curation

This sub-stage presented two more assessment opportunities, occurring in the third and fourth of Yvette's lessons on curation that I observed:

- iv. Generating criteria for the curation processes of collecting, selecting and organising. (14 August 2014)
- v. Mindmapping questions on curation and learning. (20 August 2014)

These two lessons do not correspond to a particular section of the unit plan (Appendix A).

In assessment opportunity (iv), Yvette drew a table on the whiteboard with three columns titled 'collect', 'select' and 'organise'. Each column represented a stage in curation. Pupils were told to copy this table onto a group Google Doc using the school iPads, and fill it in with questions they could ask for each of the stages. Yvette elicited a couple of questions on 'collecting' to start them off. They had to generate questions regarding the criteria for each process, focusing on 'selecting' and 'organising'. The links to the Google Docs were to be shared on Edmodo. The class struggled to understand the concept of 'criteria', and for this and other reasons they did not work as efficiently as Yvette expected. Yvette then directed the class back to 'collecting' and asked for criteria in this category. Having elicited a few examples, she asked them to generate questions for 'selecting'. By the end of the lesson Yvette had elicited single-word criteria for the first two columns (e.g. reliability, connected, relevance). Pupils were instructed to 'unpack' them and generate more questions as homework. Before the end of the same day, Yvette posted curation assessment instructions on Edmodo for the class.

This in-class activity centred around the online collaborative document with the table that each group had to produce. However, there were some hiccups:

1. Pupils forgot to configure the share settings so that Yvette could access their documents (a common problem even among experienced users).
2. Pupils spent too much time setting up the document. Yvette chided them for this and told them that one pupil should work on setting it up and sharing it on Edmodo for the other iPad, while the others start on the group discussion.
3. The iPad Google Drive app did not allow tables to be created. Some groups eventually figured out that they could create tables on a Google Sheet (i.e. spreadsheet) instead. Yvette was not initially aware of this and was unhappy that they had not followed her instructions. Tables could be created on a Google Doc if they accessed Drive from the browser, and it seemed that most groups eventually did that.

In examining the range of questions that the groups generated, we see that their understanding of curation after this lesson was not uniform. I collected artefacts from four groups (using the links they shared on Edmodo), with the weakest only managing to fill up the first two columns (and not in a table as Yvette required) (see figure 14), and the strongest filling up all three columns of the table with substantial and useful questions (figure 15).

Curation

Select

- Why do we select information?
- What are the types of values to select?
- what are the connection between each information?
- how do we know whether the information is useful?

Organize

- How do we organize?
- How can organize help us ?
- why do we need to organize ?
- Does we organize the information according to the value ?
- which platform can we use to help us organize information?

Figure 14 Questions on criteria for curation (Sample A) (last edit date unknown)

COLLECT	SELECT	ORGANIZE
<ul style="list-style-type: none"> - How do we collect? - What should we collect? - Where should we collect? - How should we know which information is reliable? - How should we check if the information that we found is important and is useful to us? - What makes the information important? 	<ul style="list-style-type: none"> - Which choices should we select to fulfil our criteria? - What makes the information interesting so that we can select it? - How can we know that what we select is relevant/link to to the choices? - When we select, how can we know that the choices has many different interesting levels? - How should we know that what we choose is reliable? - What is the way we could know that the choices we choose is much more important/value? - What we choose from the choices, how can we select appropriately so that we can comparison to what we choose? 	<ul style="list-style-type: none"> - How should we organize the choices so that it would make us easier to choose? - How should we organize it so that the viewers can see clearly? - How can we organize while identifying which choices is useful? - In what way should we organise? - What do we do with the information that we do not want?

Figure 15 Questions on criteria for curation (Sample B) (last edit date 15 August 2014)

Yvette, having realised the students were still focusing on reliability (which had been discussed the day before), asked them to move on to other criteria. She led the class in coming up with different criteria, including interest level, theme, credibility, choice of words, importance, and curiosity. She tried to differentiate between curiosity and interest, and emphasised that information must be useful and have a purpose. She wrote the key words on the board and urged the students to analyse and process information instead of copying everything.

Yvette expressed frustration over what she perceived as the pupils' reluctance to think and tendency to copy what she wrote on the board blindly (excerpt 4.5).

So my point to you is, it's better to retain and analyse and process the information than just copy. You understand? Ask yourself, what is important and of value then you copy down. Don't just copy everything I write on the board blindly. Or everything I say. Ok, 'cause you need to make the connections on your own.

(Excerpt 4.5, Yvette, assessment opportunity (iv))

Yvette instructed the class to generate questions for the 'selecting' column. After monitoring their progress, she elicited two additional criteria: connected and relevance. She emphasised that curation can be done for oneself or for others, and told the class to unpack the other criteria as homework, since they were unable to finish this activity in class.

In assessment opportunity (v), Yvette got the class to work on mindmapping questions on curation and learning in their groups. This had been work they were supposed to finish in the previous lesson, while Yvette was on leave, but had not. She had communicated the instructions to them via her work buddy, but (for reasons unknown to me) had not posted them on Edmodo. The class now had to complete their mindmaps using a mindmapping app on the class iPads, apparently with the help of the 'collect, 'select' and 'organise' table they started on in the previous assessment opportunity; most used the Mindomo app. This was to help them with the Haiku Deck presentation that was due soon. About halfway through the lesson, Yvette shared the link to Robin Good's Pinterest board 'Content Curation Visualized' (from the unit plan) (figure 15) on Edmodo. Pupils were reminded to share the links to their mindmaps on Edmodo by the end of the day.

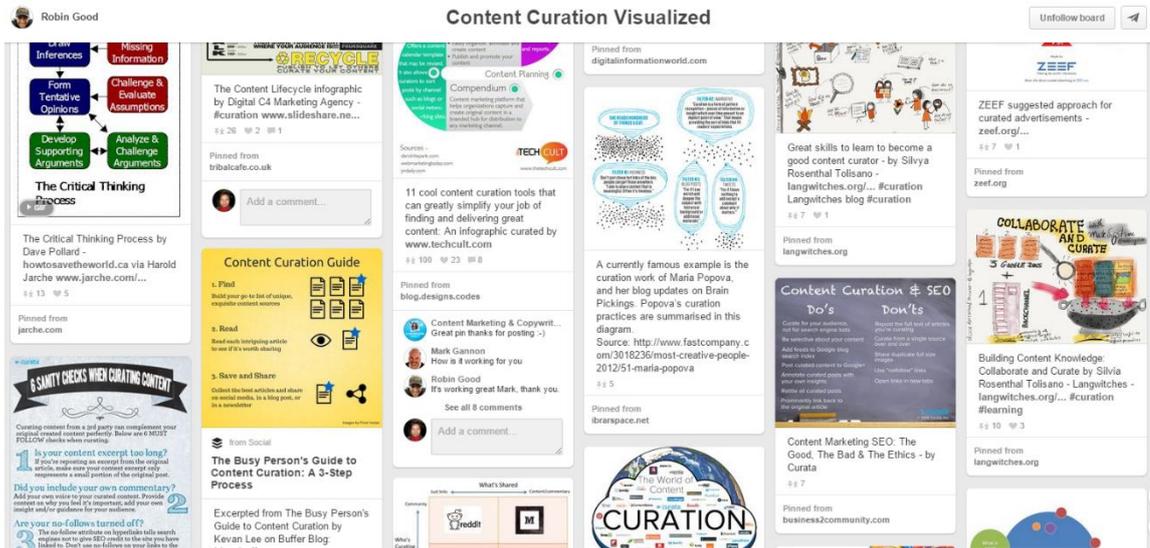


Figure 16 Pinterest board 'Content Curation Visualized' by Robin Good (Good, 2014)

The lesson was dominated by the use of digital tools, particularly the collaborative mindmapping app Mindomo. However, Yvette asked pupils to refer to their journals on how and why people collected things (excerpt 4.6), which suggested either that she had forgotten that the table from the previous assessment opportunity had been done on Google Docs, or that, less likely, the groups had worked on yet another table in a lesson I had missed. While it was understandable that Yvette might have mixed this up in her mind (since she sometimes had students write in their journals, and at other times online), this might have added to the students' confusion.

Look at your journals that you have written down, you had one column on how or why people collect things. The column as to how people select things is halfway done. So as a group now you are going to use those things and generate questions regarding curation and learning. Now don't tell me, you are not supposed to ask me things like what is, has curation got to do with learning. Those are very basic questions, don't just leave it there hanging — we went through this last lesson right? Correct?

(Excerpt 4.6, Yvette, assessment opportunity (v))

In fact, the timestamps on the students' documents showed that at least two of the groups had filled up all three columns by the day after the previous assessment opportunity. Some minutes later, Yvette told the class that since they kept 'going in circles' and coming up with the same questions, they 'might as well just Google' and come up with a 'one dimensional answer'. After this she shared the link to the Pinterest board.

Yvette told the students that she had initially withheld resources like the Pinterest board because she wanted them to develop the questions first. She later warned pupils to evaluate the Pinterest resources carefully (excerpt 4.7), revealing that she had hoped the questions would help them to make better sense of the mass of resources.

Now the Pin— the articles on Pinterest tell you different ways people curate. They are, they are by no means hundred percent, it's not like a science equation ah. You need to ask your own questions after you read them. Ok? Different images tell us different things about curation. The way people select resources are very different. Why people do it is very different. Ok, so you need to put all the information together, and make your own meanings. You cannot just copy and paste.

(Excerpt 4.7, Yvette, assessment opportunity (v))

The mindmaps produced in the end proved that while the pupils did not necessarily have a much more concrete idea of curation than when they started, they were not exactly 'going in circles' by then either. In fact, questions like, 'Is curation a lifelong process in the 21st century?' (figure 17) and 'What is learning?' showed that they had flashes of insight (figure 18), in the sense that they were able to think more deeply about learning and curation, and were by no means simply parroting what Yvette said in class.

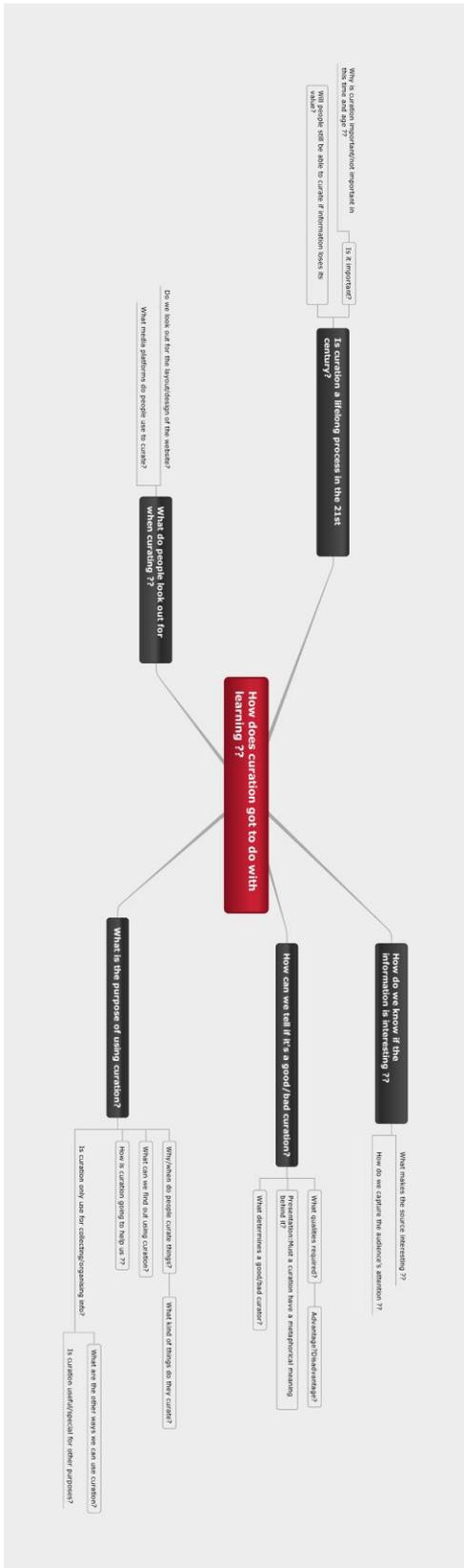


Figure 17 Mindomo mindmap (Sample A) (last edit date unknown)

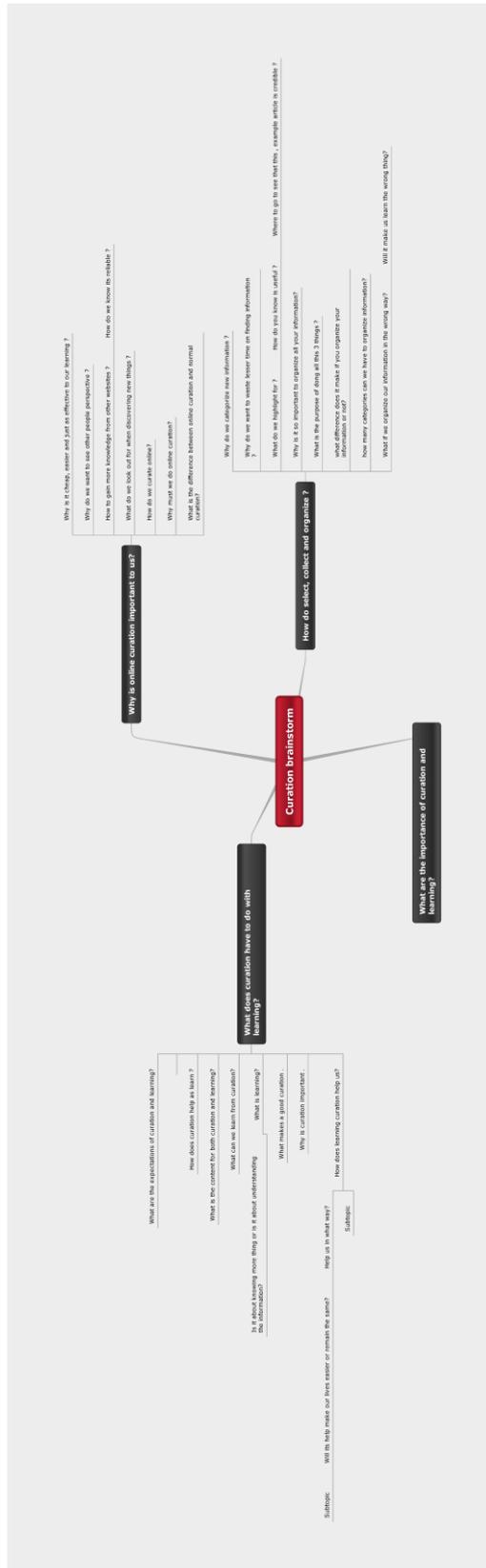


Figure 18 Mindomo mindmap (Sample B) (last edit date unknown)

The mindmaps showed too that the pupils were at this point better able to understand the purposes of curation, possibly with the help of the Pinterest resources.

Yvette's formative assessment in Stage 1

When analysing these five assessment opportunities using Wiliam and Thompson's (2008) five strategies of formative assessment, it becomes evident the extent to which Yvette's assessment practices were aligned with them.

1. Clarifying and sharing learning intentions and criteria for success

There were instances where Yvette did not clearly establish learning intentions and criteria for success. During assessment opportunity (i), Yvette did not clearly communicate the expectations for the focus questions. In assessment opportunity (ii), she did not check that students understood the term 'analogy.' In assessment opportunity (iii), Yvette faced challenges in explaining the concept of 'criteria' to her students. Yvette perhaps thought it reasonable to expect that students could engage with fairly open-ended questions at this stage as an initial brainstorming activity. However, her attempt to relate curation concepts to students' prior knowledge through analogies and examples was evidently meant to build a shared understanding, even though this was not always successful.

2. Engineering effective classroom discussions, questions, and learning tasks

Some classroom discussions and tasks appeared to lack sufficient structure and direction to support student learning. However, Yvette frequently checked for student understanding through questioning and discussions, although in the first two assessment opportunities, her questions tended to be overly general. The group discussions in the first assessment opportunity lacked structure and sufficient scaffolding to promote meaningful participation. Open-ended small group and whole class discussions are a valid approach for introducing new conceptual knowledge,

even if they lack structure. Additionally, Yvette's preference for pen-and-paper notes did not capitalise on the potential affordances of digital tools already in use.

3. Providing feedback that moves learners forward

Yvette's demonstrated responsiveness to student confusion and attempted to clarify concepts. However, the feedback provided did not always give students clear guidance to help them progress in their understanding; her generalised feedback to the entire class during the first two assessment opportunities did not effectively address students' misconceptions. Similarly, her approach of simply providing the answers to students did not offer actionable feedback that could advance their learning ('feedforward').

4. Activating students as instructional resources for one another

Yvette clearly understood the benefits of collaboration, but the group structures in place may not have facilitated effective student collaboration and peer learning, as students experienced difficulties in working together productively. Group work takes time to implement, and the students' prior experiences were likely to be insufficient.

5. Activating students as the owners of their own learning

The students were not always supported in developing ownership over their own learning process. In the first two assessment opportunities, they relied heavily on Yvette to clarify answers. Similarly, during assessment opportunity (iii), they were unable to independently determine how to complete the given task. While Yvette tried her best to correct mistakes, her approach could have the effect of undermining students' confidence in their abilities, thus increasing their reluctance to take ownership.

In summary, Yvette's formative assessment practices in stage 1 demonstrated both areas of alignment and areas for growth in relation to the strategies outlined by Wiliam and Thompson (2008). Yvette consistently checked for understanding,

responded to student confusion, and attempted to build shared understanding through analogies and examples. She also incorporated collaborative learning and encouraged students to take responsibility for improving group processes. However, there were instances where learning goals and success criteria were not explicitly established, feedback did not always provide actionable guidance, and student ownership of learning was not consistently supported. Yvette's practices showcased her commitment to formative assessment, even if the implementation varied in effectiveness across the different strategies.

Stage 2: Haiku Deck presentation

In this section, I describe assessment opportunity (vi), which was the pupils' Haiku Deck presentations (the assessment for learning 'performance task' in the unit plan). This was therefore a more significant, overt assessment event. Haiku Deck is a cloud-based presentation app that distinguishes itself from other presentation programs (such as Microsoft Office PowerPoint) by focusing on images rather than text. The Haiku Deck presentation was a formative assessment and so there were no marks or grades awarded. Unfortunately I was only able to observe one lesson/period of Yvette's class presenting (there were at least two), and so was not privy to how she set the task up.

In this assessment opportunity (27 August 2014), Yvette expressed dissatisfaction when she found that not all the groups were ready with their Haiku Deck presentations, and insisted that they present anyway with whatever they had. Rather than limit each slide to 20 seconds, as in true PechaKucha or '20x20' format, Yvette had the pupil keeping time set the timer for six minutes and forty seconds (i.e., 400 seconds). The first group she called used their notes on Evernote to present as their Haiku Deck slides were not ready. They were not able to finish presenting within the time limit. The second group had about half their slides ready, but were also unable to finish within the time limit. The third group did not seem to have their slides done and wanted to retrieve the link to their mindmap on Edmodo. Yvette told them to

explain their focus question to the class without it but they did not seem to know or remember this. Yvette reprimanded them and sent them back to their seats — they would have to present the next day. The fourth group had their slides ready and started by reading out their focus question; however, they struggled to continue, and Yvette reprimanded them for basically rephrasing her question to the class (i.e., how does curation help learning) and for defining curation which Yvette considered redundant. The bell rang at this point and Yvette told the group they would have to present the next day.

Of the four groups that presented (or attempted to), only two actually had something prepared on Haiku Deck as instructed. From within the app, users can search Flickr for Creative Commons licensed images. When an image is chosen, the attribution is inserted automatically (figure 19), thus encouraging the use of non-stock images without infringing copyright. By streamlining the process of finding and attributing engaging non-stock images, Haiku Deck makes it easy for users to curate visuals in a thoughtful, legally sound manner. Over time, this functionality has the potential to positively impact users' visual communication practices and habits on a broader scale. This is thus an app that can be used to foster visual literacy. While there is evidence from links shared on Edmodo that 2F pupils did not have the same extensive experience with Haiku Deck that 2G pupils had (see Chapter 5), the app is intuitive enough that the failure of some 2F groups to produce their slides in time probably owed little to technical difficulties. In examining the content of their presentations, we see instead that there remained some confusion regarding the nature of curation.

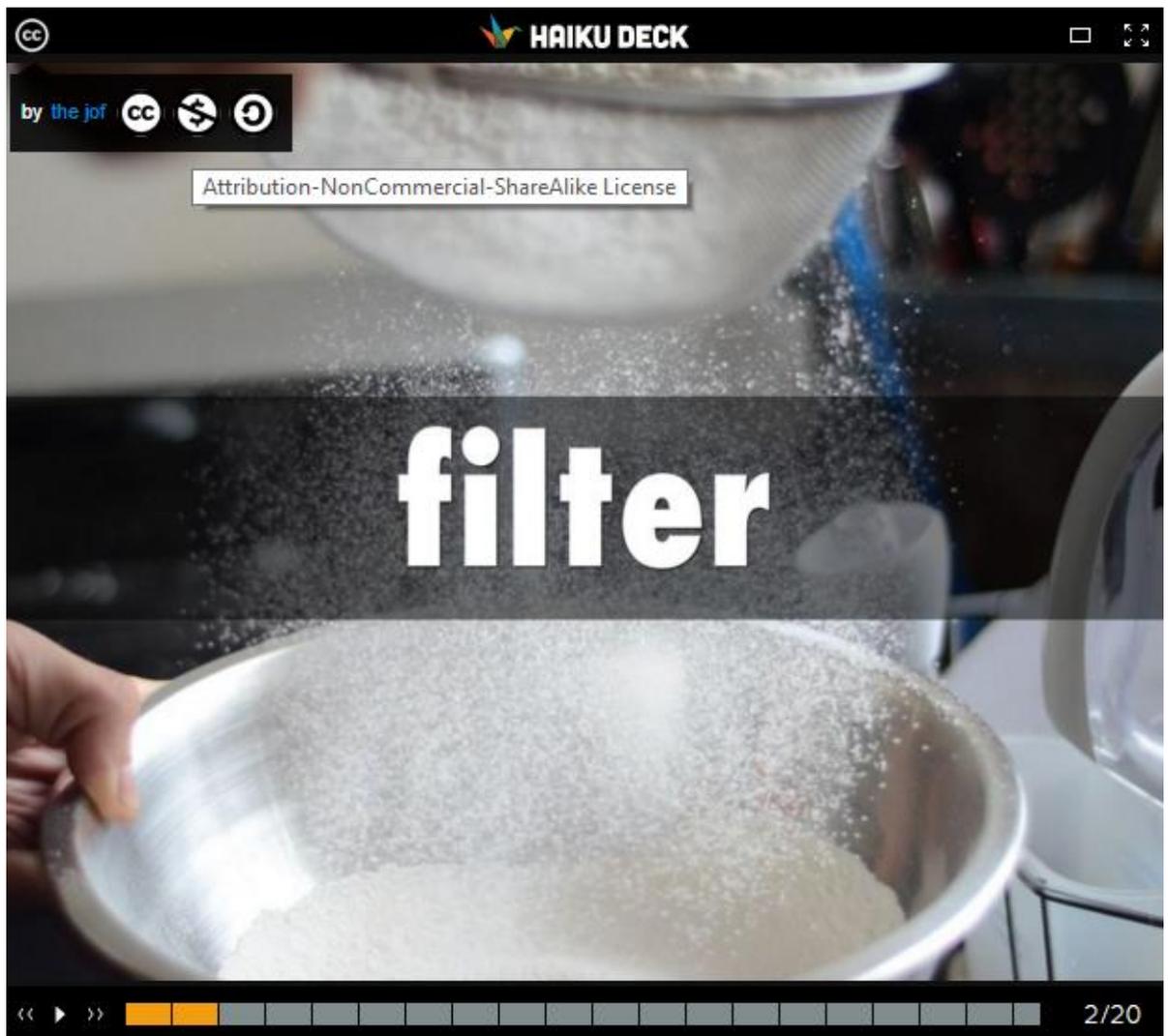


Figure 19 A Haiku Deck slide from one of the 2F groups who did not present in this lesson. Clicking on the CC symbol displays the attribution, and hovering over this displays a licence tooltip.

Yvette expressed displeasure with the second group for their focus on the differences between curation in the past and today, when their focus question was why curation was important in this time and age (as they had stated at the start of the presentation). In fact, Yvette was very evidently disappointed with the pupils' performance as a whole, to the point of telling the class not to thank her at the end of class, as is the custom in Singapore classrooms. The pupils too were obviously reluctant and stressed. When the second group was chosen to present (by the first), Xavier – a pupil in that group – expressed unhappiness, which appeared to provoke

Yvette. She also reprimanded pupils for whispering to each other mid-presentation, as they had not rehearsed.

After dismissing the class at the end of the lesson, Yvette held the last group back to ask them about the problems they had had as a group. She urged them to prioritise their own learning over loyalty to friends (i.e., to report who was not doing their part). When the pupils remained reluctant, she told them bluntly that she thought the problem was with a racial divide. A pupil admitted that the Malay pupils in the group would talk in Malay while the Chinese pupils talked in Mandarin. In Singapore government schools, there is a common practice of using English only in English language classes. This policy serves dual purposes - encouraging proficiency in English, which is regarded as the students' L1 (regardless of their home language), as well as reducing potential risk of racial friction, as harmony across ethnic groups is considered a top priority in Singapore's multicultural society. By choosing to speak in their 'mother tongue' instead, group members could exclude (on purpose or otherwise) those who did not speak the language. Yvette told them to sort out their problems openly in English.

Yvette's formative assessment in Stage 2

An examination of the Haiku Deck task using the formative assessment framework of Wiliam and Thompson (2008) identifies how Yvette's lessons aligned with these strategies.

1. Clarifying and sharing learning intentions and criteria for success

Yvette devoted time in previous lessons to developing students' understanding of curation to build a foundation for this task. However, she might not have provided clear enough expectations and criteria to guide students in preparing their Haiku Deck presentations specifically.

2. Engineering effective classroom discussions, questions, and learning tasks

The presentations provided a valuable opportunity for students to apply curation concepts in a new digital medium. Yvette incorporated peer collaboration in developing the slides. However, the scaffolding she provided was not sufficient to mitigate the challenge of translating text into visual slides. Yvette's questions during the presentations were also more focused on critiquing content rather than providing useful feedback.

3. Providing feedback that moves learners forward

Yvette provided timely feedback to presenters, though it often highlighted flaws rather than offering suggestions for improvement. Her feedback did not include many concrete details that moves learners forward in their presentation task.

4. Activating students as instructional resources for one another

There were insufficient opportunities for peer support during the presentations. Yvette did not actively encourage students to provide each other with feedback.

5. Activating students as the owners of their own learning

Yvette's questioning after presentations encouraged students to take responsibility for improving group processes, though this might have been insufficient to promote independence. Students relied heavily on Yvette's directives in revising and improving their presentations.

Overall, Yvette's formative assessment practices in the Haiku Deck task demonstrated some alignment with the strategies outlined by Wiliam and Thompson (2008). Yvette made efforts to establish a shared understanding of curation concepts, design a task that encouraged student engagement, provide timely feedback, and promote some level of student responsibility for their learning. However, there were also areas where the alignment with formative assessment strategies was less

evident, such as the clarity of expectations and criteria, the effectiveness of scaffolding and feedback, and the level of student autonomy and peer support.

Stage 3: Choosing a topic

In this section, I describe assessment opportunity (vii), which occurred during Stage 3 of the curation task, in which Yvette got the project groups to select a topic for their respective curation projects. On this date (3 September 2014), Yvette met the class twice. While I would only consider the second session an assessment opportunity, a summary of the earlier session is provided for context.

During the earlier session, pupils were told they had to decide on how and when they would meet over the upcoming school holidays (a one-week period from 6th to 14th September 2014). They were also expected to learn to Google search efficiently using resources she would share, and also to learn to use the webapps Storify and Diigo. Yvette told them that she would set up a chat room on the TodaysMeet webapp on 11th September to answer questions, and share the link. The aforementioned links were supposed to be shared on Edmodo, but I was unable to locate them when I logged in later.

Pupils then had 15 minutes to find out how to use Storify, and also discuss meeting times and tasks for their group. They were told they should post their plans on Edmodo by that night so that Yvette could track their work. Yvette checked with the class that everyone had internet access at home for TodaysMeet. She said they should only join the chat if they had done work as she did not want to answer 'stupid questions'. One group told her that they could not find a time to meet, and she told them they did not have much time left and should assign the roles first. Yvette stopped the class at that point and told them that with the internet there were many other ways to meet. Pupils suggested WhatsApp and Yvette questioned whether it was the best tool to use. She also told them that there would be no point meeting if they had not done any work. They should be clear about their meeting objectives, and should not meet just to do work together. Somebody in the group must manage

the deadlines and remind everyone.

Yvette counselled one group on how the members should handle conflict within their group (e.g., they should be polite in their disagreement). The pupils continued to discuss and Yvette circulated to monitor their progress and push them on. She reminded the class that they should decide on a topic before they looked for articles. They would be given time later in the day to think of a topic and explore Storify. Yvette briefed me on the groups' problems and their need for lots of scaffolding and what Jen (a more senior teacher) would call 'handholding'. She shared that some students were already getting better at managing problematic groupmates, though more needed to be able to do that. Yvette therefore had to monitor their task management. As the bell went, she scolded one of the groups for wasting time and summarised the tasks they had to complete.

In assessment opportunity (vii) proper, which occurred in the afternoon of the same day, Yvette told the class to finish planning their timeline and roles, and narrow their curation topic to something they can work with, using questioning and mindmapping. The rest of the work should be done at home. Pupils had to have a question they wanted to answer regarding the topic. They went online on the school iPads to look for trending topics. As Yvette did some administrative work (collecting result slips and money from pupils), a couple of pupils from another class came to get the iPads -- evidently Yvette had not booked them so another class had priority. Without the iPads some pupils appeared to drift away from their tasks and Yvette told them off. She said that the class should work on their roles and responsibilities, mindmaps and write them down in their journals to transfer later. They should also continue to discuss their topic so that Yvette could help them with it in class.

Pupils discussed the trending issues of the day that they found interesting, for instance, loom bands, the ALS ice bucket challenge, the arrest of Jackie Chan's son, the Gaza war, an iCloud hack, and selfies, while Yvette circulated to advise and encourage them. After a while, Yvette stopped discussions to tell them that they had

to pick their topic carefully -- not too broad nor too narrow. They should narrow it down to a driving question before they started searching for articles. Pupils could go to different platforms to look at trending topics and work out what the corresponding broad topics were if they looked at the category the articles were filed under. Yvette was more relaxed in this session and stopped by my seat a few times to chat with me about the pupils' progress. At one point, she asked a group why they needed to use their phones to research (this group had chosen the iCloud hack). Couldn't they think of what was trending now without checking? Overall, the pupils seemed engaged, though Yvette pointed out to me that their enthusiasm would wane when they actually got down to work. When the bell went, Yvette dismissed the class but stayed back to give a bit more advice to some students.

Yvette's formative assessment in Stage 3

An examination of this assessment opportunity, using the formative assessment framework proposed by Wiliam and Thompson (2008), reveals some relevant areas of Yvette's approach.

1. Clarifying and sharing learning intentions and criteria for success

Yvette dedicated time to developing students' conceptual understanding of curation in preceding lessons, providing a foundation to guide topic choices. However, she did not clearly communicate expectations for selecting a project topic or developing a driving question, leading to students having difficulty formulating meaningful questions for their projects.

2. Engineering effective classroom discussions, questions, and learning tasks

Yvette's questions served to check understanding of tasks. Students were given time to explore trending issues as a springboard for topics. Yvette's more relaxed mood could also have encouraged more free-flowing discussions. However, her questions to students mainly served as reminders of their tasks instead of promoting meaningful discussions. In addition, students were not given adequate guidance on

how to identify an appropriate project topic or develop a relevant driving question.

3. Providing feedback that moves learners forward

Yvette circulated to monitor and advise, demonstrating responsiveness. However, she did not offer targeted feedback to individual groups regarding the suitability of their proposed topics or driving questions, which was challenging for them.

4. Activating students as instructional resources for one another

The collaborative group structure can support peer learning in topic exploration. However, students were not encouraged to provide feedback or support to one another in identifying project topics, suggesting that activating students as instructional resources for one another was not a priority in Yvette's classroom or that she assumed constructive collaboration would occur naturally.

5. Activating students as the owners of their own learning

The collaborative group structure could support peer learning in topic exploration, and giving students autonomy in exploring trending topics maintained engagement. However, students were not guided towards shortlisting meaningful project topics of genuine interest, that enhance ownership.

In summary, Yvette's formative assessment practices in this stage demonstrated some alignment with the strategies outlined by William and Thompson (2008), such as building a shared understanding of curation concepts, creating a classroom environment conducive to student engagement, and providing some level of support and autonomy to students. However, there were also areas where the alignment with formative assessment strategies was less evident, such as the clarity of expectations and criteria, the effectiveness of questioning and feedback, and the level of student autonomy and peer support.

Stage 4: Storify

In this section, I describe the final assessment opportunity (viii) I observed, in which

Yvette guided each group towards producing a Storify for their chosen topic. This was the last lesson that I observed for this class (15 September 2014) and it is important to note that none of the groups completed the project by the end of this lesson.

As described in Chapter 3, Storify was a webapp that allowed users to create stories by linking social media posts. An example can be seen in figure 20, which is an extract from the Storify 'Curation as a tool for teaching and learning' by hbailie (2015).

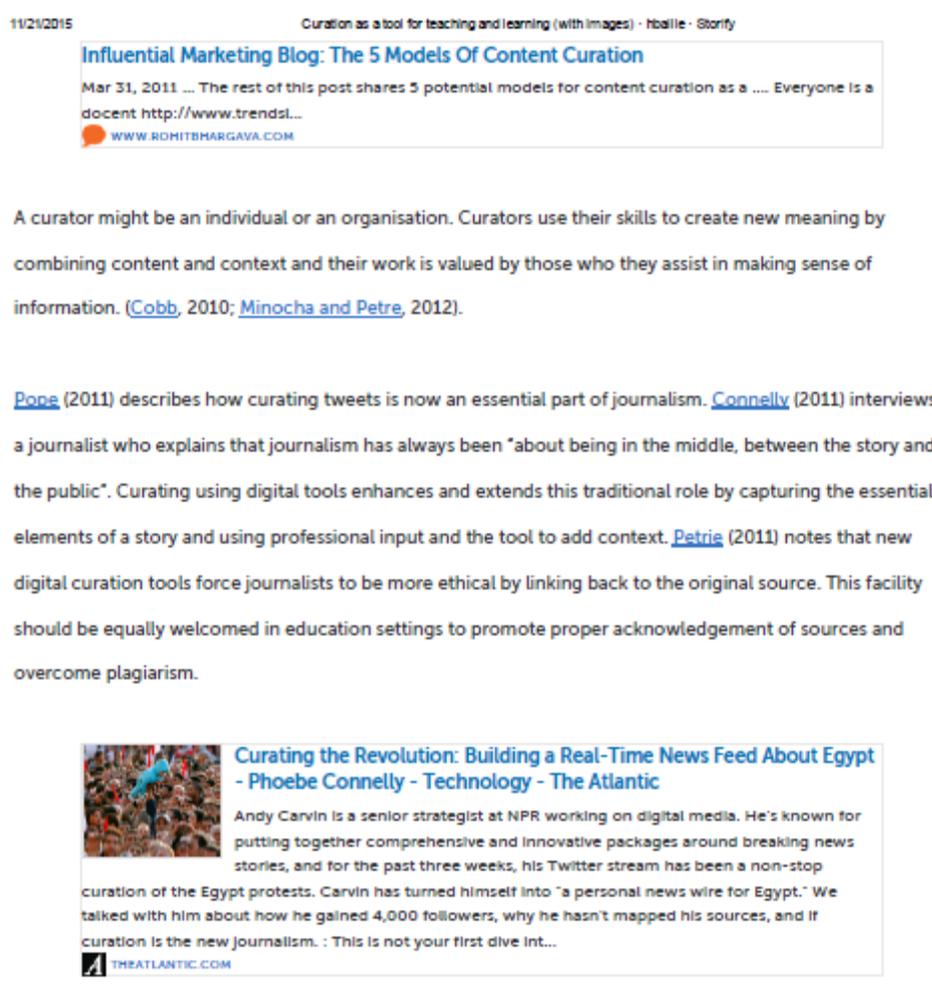


Figure 20 Extract from the Storify 'Curation as a tool for teaching and learning' by hbailie (2015)

At the start of the lesson, Yvette told the pupils they would have to use the Safari browser on the iPads to access Google Docs, since the apps had not been updated (Google had recently split up the Google Drive app). They could use their own devices with internet if they preferred. Yvette then asked if they had collected

articles for curation. Those who had should select the ones they wanted to use.

The pupils collected the iPads. Yvette told them that for curation, they should look for a variety of perspectives and sources. They should use the Diigo social bookmarking app to annotate them so that she could see their answers to questions such as: Who is writing? From what point of view? Whose perspective? What was the purpose? They could look at op-eds too, not just news articles. She pointed out that because they had to build a story on Storify, they needed something to intrigue the reader. They then started work and Yvette circulated to advise.

Yvette asked a group why they had not managed to get work done over the holidays and what their driving question was. This group's topic was internet security (prompted by a recent iCloud nude photo leak). She gave them advice on the kind of articles they could look for. She told the group working on ALS ice bucket challenge that their driving question (what was the purpose?) was too straightforward and easily answered, and suggested others, for example, why was it so popular? Another group wanted to work on the iPhone 6 but they did not have a driving question. The next group wanted to research the purpose of selfies but Yvette suggested why and who questions instead. The group after that wanted to look at loom bands and teenage trends but again had no driving question. At this point, Yvette stopped the class to tell them that their questions were too straightforward, requiring just a simple answer. They should be exploratory, not factual; people should be able to have different opinions based on what they read. Yvette continued to patiently check on each group and advise them, telling one group that she had many articles that she could share with them, but would not because she wanted them to explore the topic on their own. She advised the group working on the war in Palestine to be aware of the different news sources that may provide different perspectives.

After some time, Yvette stopped the pupils again to say that they had to find time out of class to work on the project and not rely on her lesson time. They should start annotating articles now on Diigo. She wanted to model the process of annotation

verbally. She projected on the screen an article about the ban on the film *To Singapore With Love*. She asked: Did pupils know about the ban? Did they know why it was banned? It was banned for 'undermining national security' -- if pupils didn't understand 'undermine' they could check Dictionary.com. She asked: What is 'national security'? What questions would one ask if annotating the article on Diigo? She pointed out that the intense curiosity over the film was partly due to the ban (i.e., the Streisand effect). A topic that could arise from such a story was censorship. A driving question could be about whether censorship was good for the country or community. She explained how the film represented a perspective that is kept from the public, for instance, not in history textbooks. She asked if events not in history textbooks were true. Pupils should not only pick articles that confirmed their opinion, but look at a variety of perspectives. She emphasised that they should not always assume that events in the news did not affect them, that they were 'boring'. She urged them to read up on the ban in their own time, and on other current issues that might affect them.

Pupils continued working on their projects until the lesson ended. Yvette reminded them to annotate their articles before Storifying them and send the links of annotated articles to her as they would be graded. Based on what was posted on Edmodo after this lesson, not all groups managed to complete and submit a Storify for this project. I was able to locate (and access) two Storifies, but only one resembled a typical Storify of social media posts linked by comments (figure 21). In this case, the group did not insert social media posts, but direct links to online articles instead. There were six articles in total. The other Storify included only two articles, and these were inserted as links to Diigo bookmarks rather than embedded as snippets (figure 22). Comments were included as bullet points. Another group submitted a Google Doc that showed how they unpacked their driving question (figure 23), and also a link to their Diigo page with annotations (figure 24). I did not observe any feedback for these, and was not provided with the final marks. During our final interview, however, Yvette told me that she passed all the groups, even the

two groups that did not produce a Storify at all (because they had completed enough of the project).

Celebrity, Network, Meaning, and Fun: the ALS Ice Bucket Challenge

Celebrity, Network, Meaning, and Fun: the ALS Ice Bucket Challenge. Sep 2, 2014. In the digital age, things often go viral on the Internet, such as a funny cat ...
USCPUBLICDIPLOMACY.ORG

The Ice Bucket Challenge was used to raise awareness as it said that the ice water causes numbness over oneself allows participants to experience the sensations that those with ALS experience. This action-meaning closeness gives more sense to the ALS campaign. It not only offers a chance for challengers to feel ALS symptoms, it also delivers a clear message to the video audience. However, can Ice Bucket Challenge stay viral for a long period of time?

Ice bucket challenge: who's pouring cold water on the idea? | World ...

Aug 25, 2014 ... Then there are the animal rights activists and those whose job it is to worry ... Ice bucket challenge: why are people pouring cold water on their ...
WWW.THEGUARDIAN.COM

Protesters from China protest towards Ice Bucket Challenge from the photo of showing a group of people holding onto buckets with nothing [inside](#). In India, people changes the originality of Ice Bucket Challenge to Rice bucket challenge, of using the same concept of buckets, but instead of using ice, they place rice inside the buckets and gave them to people who need it. Even though the concept of bucket is the same, but their purpose may be different. The purpose of Rice Bucket Challenge was to help the poor and needy that can't afford enough money to eat, thus giving rice to them. While the Ice Bucket Challenge was to raise awareness about a disease called "Amyotrophic Lateral Sclerosis".

Figure 21 Storify extract A from Yvette's class

1. DRIVING QUESTION :
 2. DOES THE FASHION INDUSTRY EXIST MAINLY TO PERSUADE PEOPLE TO SPEND MONEY ON THINGS THEY DO NOT REALLY NEED?
 3. diigo.com/04zt4c
 4. NEGATIVE :
 5. - Youngsters who pay more attention to fashion are less attentive to their studies. □ +
 6. - If one doesn't have enough money to buy a certain piece of clothing, then see it being worn around schools, their self-esteem can be lowered into a certain degree.
 7. - Fashion is a waste of time as there are too many people wrapped up in what's in or getting the next best thing.
 8. - If girls think that they will be liked if they look good then they will grow up to be lonely and have no friends.
 9. - Many things that are considered fashionable are ruining society by the way people dress up or wear their clothing.
 10. - Not only will the store charge you \$100 for that pair of jeans, they will let you pay more than that if you don't want to pay for it all right now.
 11. - Fashion is the biggest scam in consumer product because their products are never worth what you have to pay to be fashionable.
 12. - Influenced by celebrities
 13. - Teenage girls look up to their favourite celebrity/model and they will do anything just to be like them.
 14. - Girls are so obsessed with being popular and accepted that they are trying to bypass being a girl and instead are trying to rush into being a woman.
 15. - They aren't even getting the chance to figure out for themselves the stupidity of celebrities who spend a good sum of money walking in 9" stilettos or shoes without heels all for the sake of publicity.
 16. - It is obvious that the celebrity is just hiding behind the same insecurity that the little girls have about being accepted and loved for who they are.
 17. - The fashion industry encourages an unrealistic outlook for men and women in regards to their bodies and their looks.
 18. - Women and men have gone to great extremes to mold their bodies into what the fashion world has decided is "perfect".
 19. - Societal problems, such as anorexia and teen violence, are exemplary as to why fashion can actually be harmful.
 20. - Some restrict their eating to the point that their health suffers as they want to achieve the skinny body that the supermodels have.
 21. POSITIVE :
 22. - Fashion allows people to express themselves in an individual way.
 23. - It shows that people have freedom and therefore allows them to relax and feel comfortable for who they are.
 24. CONCLUSION : This article is mostly telling us the negativity about fashion.
 25. diigo.com/04zwfr
 26. POSITIVE :
 27. - Creating new trends allows teens to feed their interest in the fashion industry.
 28. - Something as simple as the bag a teen carries, or the watch she wears involves fashion can become a new trend.
 29. - Friendship bonds can also be strengthened when a group of teens feels a sense of belonging through wearing similar looks that promote specific interests.
 30. - Trendsetting teaches teens to create new looks without spending too much money.
 31. - Fashion used to be found only among the affluent class of people, but times have changed since class is no longer a factor on the road to becoming fashionable. Fashion trendsetting involves imagination and creativity.
 32. - Setting attainable trends teaches teens to budget their money while setting their creative genius free.
 33. CONCLUSION : This article tells us about the positive effects on fashion and that we don't have to be in trend to fit in, we can wear anything we want to as long as we are comfortable with it.
-

Figure 22 Storify extract B from Yvette's class

Young Celebrities Drug Abuse

- Reason why we chose the Statement?
- Focus Statement : Are there any specific reason why young celebrity are taking drugs ?

Criteria : (When choosing of articles)

- **Important**
 - Helps to lookout for useful information while selecting and annotating your sources
 - Helps us to decide and focus on the sources that helps us with instead some sources that doesn't Helps us in our research.
- **Interesting**
 - helps us to find sources that is nobody ever heard or will be surprised and be into it.
 - help to hook the audience as it is curious to them something they never heard of it. Something that is worth sharing.
- **Relevant**
 - Stay on track in choosing the articles in your focus statement so you won't go out of point.
 - Help to select and look out for information that is related to the focus statement.

(BEFORE AND AFTER)

(CAUSE AND EFFECT)

- Are there any specific reason why young celebrity are taking drug ?
(Answer: Yes, there are many reason they took drug because of being forced, peer pressure, family background and problem)

@What make young celebrities take drugs?

- what can drugs do to young celebrities?
- What can young celebrities do when they are taking drugs?
- how did young celebrities get involved in drugs? why?
- why did they even started taking it?
- Knowing the risk of drug, why didn't they stop? Why did they started it anyway?

Figure 23 Google Doc extract from Yvette's class -- driving question



What is Cocaine? How is it Made? Street Names & Nicknames for Cocaine - Drug-Free World - 0 views

www.drugfreeworld.org/...cocaine.html

shared by [redacted] on 12 Oct 14 - Comment - Like - No Cached - Save To My Library - More ▾

Today, cocaine is a worldwide, multibillion-dollar enterprise. Users encompass all ages,



[redacted] on 12 Oct 14

Question: - Why is cocaine worldwide and encompass when it is dangerous and can leader to death from respiratory? - Why are there still people taking cocaine drug? -What make people take cocaine drug and become a addiction?

Cocaine use can lead to death from respiratory (breathing) failure, stroke, cerebral hemorrhage (bleeding in the brain) or heart attack. Children of cocaine-addicted mothers come into the world as addicts themselves. Many suffer birth defects and many other problems.

Despite its dangers, cocaine use continues to increase



[redacted] on 12 Oct 14

- Why more people taking cocaine despite knowing that is dangerous to us? - What is the use of cocaine drug?



'I didn't kill drug addict Michael Jackson': Conrad Murray - 0 views

nypost.com/...-michael-jackson-conrad-murray

shared by [redacted] on 12 Oct 14 - Comment - Like - No Cached - Save To My Library - More ▾



[redacted] on 12 Oct 14

Michael Jackson's deadly Doctor Feelgood insisted that The King of Pop gave himself lethal doses of anesthesia after pleading for more drugs. In his first interview since getting out of jail, Dr. C...

Figure 24 Diigo extract from Yvette's class -- annotated links

Yvette's formative assessment in Stage 4

Examining this assessment opportunity using the formative assessment model developed by Wiliam and Thompson (2008) highlights some relevant areas of Yvette's approach.

1. Clarifying and sharing learning intentions and criteria for success

Yvette had dedicated time to developing conceptual knowledge to provide foundations for the Storify task; however, she was not as effective in clarifying expectations for the task itself. She did not provide clear guidance that would have helped students complete the task more successfully.

2. Engineering effective classroom discussions, questions, and learning tasks

Yvette did not effectively scaffold the complex tasks required to produce a coherent Storify, which included searching, evaluating, annotating, and organising information. Her verbal explanation of annotation was also not illustrative enough to enable students to complete the task more effectively.

3. Providing feedback that moves learners forward

Yvette demonstrated patience in guiding students in class while they sourced for articles. She gave the feedback that their driving questions were too 'straightforward'. However, there was no evidence to suggest that Yvette provided targeted feedback to help them improve their annotations and Storifies.

4. Activating students as instructional resources for one another

Group work supported organic peer learning. However, as before, Yvette did not provide structures that better facilitated peer support in completing the Storify tasks (such as clear roles).

5. Activating students as the owners of their own learning

Yvette gave autonomy for students to direct their own inquiries, empowering

independence. However, she did not actively encourage students to display autonomy and ownership over their Storify tasks, by guiding them in monitoring and evaluating their own progress, so as to complete the tasks more independently and effectively.

In summary, Yvette's formative assessment practices in this stage demonstrated some alignment with the strategies outlined by Wiliam and Thompson (2008), such as building a shared understanding of the task's conceptual foundations, providing some level of support and guidance, and allowing for some student autonomy. However, there were also areas where the alignment with formative assessment strategies was less evident, such as the clarity of expectations and criteria, the effectiveness of scaffolding and feedback, and the level of student autonomy and peer support.

Summary

This section started with insights from an initial interview with Yvette, then described and analysed her classroom assessment practices across the four stages of the digital curation project using Wiliam and Thompson's (2008) five formative assessment strategies. The analysis revealed patterns in Yvette's practices that contributed to the project's outcomes and the development of students' digital literacies. By the end of the fourth stage, it was clear that the curation task had not been particularly successful. As mentioned above, not all groups managed to complete and submit a Storify for this project (it must be noted, however, that not all of Jen's groups were able to complete theirs as well).

Across all stages, Yvette made efforts to build a shared understanding of curation concepts, design engaging tasks, provide support and guidance, and promote some level of student responsibility and autonomy. However, the analysis also identified consistent challenges in the clarity of expectations and criteria, the effectiveness of scaffolding and feedback, and the level of student autonomy and peer support.

These patterns were evident in the student work produced, such as the incomplete

Haiku Deck presentations and the limited number of Storify submissions.

The analysis highlighted the connection between Yvette's formative assessment practices and student learning outcomes. For example, unclear expectations and ineffective feedback in Stage 1 led to students' difficulties in understanding the concept of curation, while the lack of clear guidance and scaffolding in Stage 4 hindered students' ability to complete the Storify task successfully. The consistent application of the formative assessment framework across all stages allowed for a comprehensive understanding of how Yvette's practices impacted the project's outcomes.

The findings address RQ1a on how teachers' formative assessment practices impact the assessment of digital literacies. The analysis revealed that when formative assessment strategies were not effectively implemented, such as unclear learning goals, insufficient scaffolding, and limited feedback, students struggled to develop the necessary digital literacies to complete the curation project successfully. This underscores the importance of formative assessment practices in supporting the development of digital literacies. Situated within the broader research context, the analysis of Yvette's practices highlights the complexities of assessing digital literacies and the challenges teachers may face in implementing formative assessment strategies in such a context.

In the next stage, I move beyond the observation of Yvette's formative assessment practices and the resulting student outcomes, and focus on the wider set of internal and external elements that affected Yvette's classroom assessment of digital literacies.

4.3 Elements that affected Yvette's classroom assessment of digital literacies

In this section, I address Research Questions 2-4 in part, in relation to Yvette's class:

RQ2a: What specific assessment literacies are required for teachers to effectively assess digital literacies in the classroom?

RQ3a: How do teachers' own digital literacies affect their assessment of digital literacies in learners?

RQ4a: How do teacher-student relationships, expectations, and mindsets affect the assessment of digital literacies?

This analysis uses the framework described in [section 3.5](#) (figure 11).

Yvette's assessment literacies – 'there's still a lot of things I can work on'

Reckwitz (2017) has emphasised the affective facet of social practices: 'The possible failure to participate in a practice [...] is not only a question of lacking corresponding skills and interpretations, but also of lacking corresponding desires and fascinations' (p. 120). In assessment opportunity (i), we see an example of Yvette struggling with the use of questioning as formative assessment. This assessment opportunity was characterised by uncertainty on the part of the pupils, and impatience and frustration from Yvette. In excerpt 4.8, we see Yvette mishearing or misunderstanding a pupil's responses, and her ensuing expression of frustration. Xavier had caught her hint that curation involved more than one resource, and emphasised his self-correction 'ONES'. When Yvette failed to pick up on that, he was either confused or unwilling to answer further. The negative emotions on both sides may well have impeded the already difficult task Yvette had of recruiting participants.

Y: For example, ~Xavier, you did the documentary on what's a war hero right?

X: Uhuh.

Y: What did you have to collect?

X: Collect, uh, audio film.

Y: And then?

X: And then pick the one that, that...

Y: You pick one?

X: Pick, pick the...

Groupmate: ((SOTTO VOCE)) The one.

X: the ONES that people can understand lah.

Y: Yeah so — but curation is about gathering resources right? And then organising, so do you just pick one? Do you just pick one?

X: ((SILENCE))

Y: Ok, I'm going to give you five minutes, this is not working — it's like I'm talking to the wall again, as usual.

(Excerpt 4.8, Yvette, assessment opportunity (i))

Similarly, during assessment opportunity (ii), pupils were uncertain and Yvette frustrated. Yvette clearly thought the uncertainty was due to lack of effort (excerpt 4.9). This occurred after repeated questioning about the restaurant analogy failed to elicit an acceptable answer from the pupils.

Yvette: You all like to take things out of context. That means you hear what you wanna hear and then you don't build meaning[...]

You all have to listen, I'm really quite disappointed you know in the way you all you all understand information. It's not very difficult to understand.

(Excerpt 4.9, Yvette, assessment opportunity (i))

During our mid-semester interview (after assessment opportunity (vii)), Yvette expressed her desire to be a better assessor, including the wish to be better at

questioning (excerpt 4.10).

My performance in classroom I think it has gotten better if you compare it to last year but there's still a lot of things I can work on like such as, um, giving timely feedback, um, things like also questioning the kids' decisions so that I don't tell them. There's a very fine line between questioning to invoke the answers that you want, as opposed to questioning for them to find out the answers for themselves.

(Excerpt 4.10, Yvette, Interview 2)

It is clear from the above that Yvette was quite conscious of the importance of questioning. That is, answers should be elicited from students, rather than just given to them ('spoonfeeding', as Yvette called it). At the same time, she struggled to pitch her questions at the right level of difficulty. This was something Yvette was also aware of, as she stated later in the same interview (with specific reference to her English literature classes) (excerpt 4.11).

I want to, uh, be better at setting assessment questions, assessment texts. I'm not very good with probes, um, and a lot of the poetry that I pick don't really suit our kids, that's why I have a very hard time. Like I mean if I were in a better school, the school that had ling- I mean had had had lit, you know, everybody did lit, I could pick like things from like William Blake or whatever but th- these are not William Blake kids...

(Excerpt 4.11, Yvette, Interview 2)

In the above excerpt, we see Yvette's self-awareness that the difficulty she experienced stemmed from her expectations of her students' capabilities, which were typical of students in a 'neighbourhood' school in Singapore (that is, in her opinion, they were not students who would be able to handle a Blake poem in an examination). However, as evident during the lessons, this self-awareness did not necessarily lead to a better management of her expectations, resulting in a great deal

of dissatisfaction.

In the examples above, we see that Yvette attributed some of the challenges she experienced in the lesson to her questioning practices, and to her perceptions of the level of the students. However, the observations and interviews also revealed that Yvette's assessment literacies intersected with her digital literacies in complex ways. For example, in assessment opportunity (i) described above, I observed certain tensions between digital literacies – analogue versus digital – and between assessment literacies – traditional versus alternative assessment (summarised in table 3). Even though the class appeared to have collaborated successfully in the previous lesson on Padlet, and each group had more than one iPad (and the Padlet was displayed on the projector screen in any case), Yvette nevertheless required them to take individual notes in their journals, rather than do collaborative notetaking. In her lessons, Yvette would remind her pupils to write things down in their journals periodically. We might perceive this as a tension between digital collaborative and analogue individual practices: typing versus writing with pen and paper, composing collaboratively in real time versus comparing notes, and knowing how to carry out the process of sharing an online document with permission to collaborate versus writing individually while discussing verbally. The analogue practice, being the far older one, possessed a persistence and 'stickiness' that we can attribute to strongly embedded routinisation (Reckwitz, 2002). For Yvette, for example, asking pupils to write things down in their journals is clearly a routine with some tenacity.

Table 3 Tensions between literacies as observed in assessment opportunity (i)

Analogue/traditional assessment literacies	Digital/alternative assessment literacies
pen-and-paper notetaking - individual task	online collaborative notetaking - collaborative task
answering questions based on memory (the video What is Curation) and higher order thinking - traditional assessment	online search - authentic assessment with access to the Internet

Another digital practice that struggled to find traction within the assessment opportunity was online search. As stated by Jen in the unit plan (Appendix A), the three components of online curation are search, collect and select. The first group Yvette asked to share their answers told the class that they had gone to Google.com and searched for ‘why should you curate’. Some pupils laughed at this, which perhaps signalled that they doubted if this was a ‘legitimate’ use of the iPads and Google (and of technology) in the classroom – that is, they doubted that online search was a legitimate practice in the classroom assessment context. They might therefore not have expected Yvette to chide them for laughing and not Googling for it themselves, which occurred during assessment opportunity (i) (excerpt 4.12).

Yvette: Ok you laugh at him, you all laugh, how many of you all did that? How many of you did that? Three![...] You have your iPads in front of you; information is at your fingertips, right. You can use, you can — I didn’t ask you to search, but you could have used the tool to search, and then get more information if you are stuck, right? It’s nothing embarrassing to look for information.

(Excerpt 4.12, Yvette, assessment opportunity (i))

Her response suggests an intention and willingness to build students' assessment literacies to utilise online search for academic inquiries. However, in terms of Reckwitz's (2002) practice theory, the pupils could be said to lack the 'motivational knowledge' to Google. The in-class practices with traction are those typical of traditional assessment practices, such as answering questions without reference to books and notes, and certainly without the Internet. Yvette sensed that it was embarrassment that held them back; whether or not this was true, Reckwitz's 'states of emotion' surely played a role, as the students laughed in response. This moment highlights an opportunity for Yvette to further develop her own assessment literacies in order to better cultivate her students'. While Yvette demonstrated intention to normalise online search practices in the classroom, prevailing traditional assessment norms limited her ability to fully leverage technology for inquiry-based learning.

The above example, along with Yvette's query as to whether the pupils had looked for simpler websites when the first ones they had found were too difficult to understand, highlighted that the pupils' digital practices and literacies ran counter to Yvette's expectations. There is a tendency even among educators to buy into the myth of the 'digital native' (White & Le Cornu, 2011); while 'digital natives' might have certain practices that are digital, these may not constitute digital literacies as proposed by Rheingold (2012). For instance, while the pupils may know how to type keywords into www.google.com.sg and click on the resulting search results, this practice may not include the knowledge/know-how of appropriate usage (e.g. in class during formative assessment), advanced search techniques (e.g. using Boolean search operators), or critically assessing the search results (i.e. information literacy). Jen had planned for search skills to be taught later in the unit, likely to fill this gap.

As summarised in table 4, Yvette used the video in assessment opportunity (ii) to conduct what was essentially a conventional listening/viewing comprehension exercise by playing it via the projector for the whole class to watch. It should be noted, however, that Jen in the unit plan intended the task to be '- Show the video -

get students to take notes focusing on what is curation, why do we need to curate, how do we curate' (Appendix A); in other words, the video was intended primarily to introduce the concept of curation. Coming up against each other here are two competing literacies: traditional listening and viewing in the style of summative assessments (watch straight through once and answer comprehension questions), versus 'new' watching of online videos (with the individual freedom to pause, restart, rewind, fast forward and skip as you like). The latter is typified by the now common practice of watching YouTube videos, at least outside of the classroom. While Jen did not state in the unit plan how she intended pupils to watch the video, the iPads that Yvette's class had access to, even if they had to share them, meant that there was an affordance available she did not use. I highlight this here because the video was indeed a difficult 'text' for these pupils, and the latter practice would have given them more opportunities to fulfil the task of understanding curation, as well as grasp the gist of a difficult text at the minimum (even if they did not understand it totally). Just as the pupils had not (mostly) thought of Googling for answers, so Yvette did not seem to have thought of getting the pupils to view the YouTube video on their iPads.

Table 4 Tensions between literacies observed in assessment opportunity (ii)

Analogue/traditional assessment literacies	Digital/alternative assessment literacies
listening/viewing comprehension after watching video once as a class, in order to practise language skills - traditional linear comprehension task	watching an online video individually or in small groups, with the freedom to pause, rewatch, etc., in order to learn new knowledge - authentic individualised non-linear task

We might also perceive that Yvette's assessment practices were product rather than process driven (table 5), and therefore more traditional. She was focused on getting

the pupils to put their questions down, in the specific format that she asked for, even if they had to resort to paper. This signalled a willingness to forgo the benefits of online collaboration. As we had seen from assessment opportunity (i), Yvette’s routinised assessment practices were paper-based.

Table 5 Tensions between literacies as observed in assessment opportunity (iii)

Analogue/traditional assessment literacies	Digital/alternative assessment literacies
pen-and-paper/offline writing - assessing product (get the questions down on ‘paper’)	online collaborative writing - assessing process (collaborative learning)
teacher-directed rote learning	self-directed learning and meaning making

The students’ struggle over the concept of ‘criteria’ also highlighted that Yvette had a perhaps subconscious assumption that her pupils already had an existing schema they could work with in learning how to curate. She was frustrated too that they did not take the initiative to overcome this problem: ‘You all don’t know what criteria is, you all don’t know how to Google, you all don’t know how to ask.’ In essence, she was irritated by her pupils’ inability to be self-directed learners. Certainly it was also possible that, as in assessment opportunity (i), they were unsure if they could take to the internet to find out what ‘criteria’ meant, given how circumscribed their iPad use seemed to be in Yvette’s class. It is worth noting here that Yvette’s desire for her pupils to be self-directed learners is in conflict with her desire for them to produce work that met her specific instructions (e.g. questions in a table) (table 5). What Yvette wanted, then, was for her pupils to make meaning for themselves. However, this could be a tall order for learners who are working out of their depth and with inadequate scaffolds, and are furthermore used to learning in a system that

rewarded rote learning and model answers.

In assessment opportunity (v), as before, there was an underlying tension between digital and analogue. We are able to see from the timestamps that at least two of the groups had filled up all three columns by the day after assessment opportunity (iv), though possibly Yvette had not followed up on them after that lesson.

Regardless, this seemed to indicate a lack of continuity in the way Yvette had staged this project for her class, perhaps exacerbated by her reluctance to stick solely to digital tools. That she had relied on a colleague to communicate with her class in her absence rather than Edmodo was another indication that her 'default position' was not digital. In the mid-semester interview, she expressed dissatisfaction with Edmodo specifically (excerpt 4.13). Later in the same lesson, she asked one group why they were not working collaboratively on the mindmap on both iPads, which suggested that the pupils' 'default position' was not necessarily digital either (despite possibly being less 'paper-first'), as already seen in assessment opportunities (i) and (iii). As mentioned above, her analogue assessment practices possess a 'stickiness' that was difficult to overcome.

I think I would [...] wanna monitor the project work more closely. Um I think I would also wanna look for a platform that is easier to manage than Edmodo, I feel Edmodo is really messy.

(Excerpt 4.13, Yvette, Interview 2)

Yvette's struggles with reconciling digital and assessment literacies could have stemmed from a view of digital tools as a way to replace or merely enhance assessment, rather than transform it (Puentedura, 2006) (excerpt 4.14). As she confided in the second interview, to accept that technology has a part to play in education represented a sea change for her, as it was something she pushed back against even as a student teacher. As seen in the previous section, she is not highly digitally literate, so for her to see the role that technology can play in assessment

was understandably difficult and a work in progress.

I was against tech, I kept asking like lecturers, I said you know what does it do, you need to tell me what added component does it add, you know you cannot just tell me, oh, you need to use ICT in the classroom and then everybody clicks like a a video or YouTube or PowerPoint. [...] This year I'm exploring what it can, added dimensions of tech, you see, and that's what's interesting instead of 'cause I think last time I just saw it as a replacement.

(Excerpt 4.14, Yvette, Interview 2)

In summary, Yvette demonstrated tensions between her traditional, analogue assessment literacies and the digital and alternative assessment literacies expected in the unit plan. She struggled with questioning techniques, had unrealistic expectations of her students' capabilities, and found it difficult to manage her impatience and frustration when students did not provide answers as quickly as she wanted. While aware of the importance of eliciting answers from students rather than simply telling them, Yvette continued to rely on routines like pen-and-paper note taking and product-focused assessments. There were also tensions between Yvette's expectations for students to be self-directed learners and her desire for them to follow specific instructions. Her assessment practices prioritised traditional comprehension over alternative approaches utilising digital tools like online videos. This highlighted mismatches between Yvette's established assessment literacies and the digital and collaborative practices emphasised in the unit plan.

Yvette's digital literacies – 'I'm personally not a very digital person'

In this section, I examine Yvette's display of her own digital literacies. Given that this was a major theme in my discussions with Yvette, and that Yvette often commented on specific digital elements related to the project stages, I will present Yvette's reflections and comments to support my analysis. In this analysis, I define digital literacies as the social 'practices of communicating, relating, thinking, and 'being'

associated with digital media' (Jones & Hafner, 2021, p. 17). In this sense, digital literacies refer to practices rather than skills or competencies, and are therefore socially situated in the specific contexts in which they occur.

In assessment opportunity (i), the goal appeared to be to check the students' understanding of what curation is, why it is done, and how it is done, as these were the focus questions posed to them. Prior to this lesson, students had watched a YouTube video on this topic and posted questions on curation and learning online on Padlet (figure 12). My analysis of the classroom observation above suggests that students were lost as to what the focus questions were, and they were not able to answer Yvette's questions to her satisfaction, even after they were given time to discuss in their groups.

Video on demand, such as the YouTube video mentioned above, can be a good way to teach content. Aside from promoting multimodal literacy in students, they have the advantage of allowing students to rewind and rewatch at will, thus giving students with weaker language skills (or those simply unfamiliar with the accents in the video) more time for comprehension. Students can also pause the video at will to take notes, ask questions, discuss with peers, or Google unfamiliar words/concepts. However, Yvette preferred playing such videos on the classroom projector, which, while allowing her to have better control of class time, also meant that the affordances mentioned above could not be leveraged.

Padlet is a useful tool for collaborative learning, and while it was well-chosen, Yvette could have further leveraged its affordances. For notetaking during the group discussions in the first assessment opportunity, students were asked instead to use their personal (paper) study journals. In other words, other than reference to the Padlet questions posted by the students previously, digital tools were not used. There was perhaps a missed opportunity here. Another affordance of such tools is that they allow the teacher to monitor students' progress conveniently from one place, but Yvette spent most of her time walking around the classroom instead.

In the sense that to be digitally literate goes beyond simply being able to click the appropriate buttons, and to be able to fulfil specific goals of doing and being (Jones & Hafner, 2021), Yvette was not able to demonstrate the latter in this particular assessment opportunity. The goal here was to check students' understanding, and since this was a formative assessment opportunity, an associated goal was for further learning about curation to take place as well. While Yvette understood how Padlet worked and was able to guide students to use it (that is, everyone involved knew what to click to make it work), she was not able to perform these actions to accomplish the aforementioned goals. Therefore, in this instance, her digital literacies were not well aligned with the task of helping students to understand an aspect of digital literacies (i.e., curation). In addition, the students also missed opportunities to learn collaboratively through Padlet; while this was not her explicit goal here, such missed opportunities to assess another aspect of digital literacies (i.e. collaborative learning) should not be overlooked, especially as to be digitally literate is not only about knowing (concepts), but also about doing (practices).

Despite Yvette's attempts to relate curation to more familiar work like project work and exam preparation, the class seemed unsure about the purpose and benefits of curation. They had not, at least consciously, curated content, and so curation remained for most something abstract. It is difficult to teach what a socially situated practice is without the benefit of an authentic and familiar context. An additional obstacle might be that Yvette herself (excerpts 4.15-4.17) did not usually practise curation. Reckwitz (2002) conceived of individuals as carriers of practices, but an individual who does not carry a particular practice would of course face considerable difficulty in 'infecting' others with it.

...that's my frustration with curation like it's like there's no one way to do it and one one piece of information can fall in two categories, three, multiple...

(Excerpt 4.15, Yvette, Interview 2)

I knew about ScoopIt, I knew about, I've known about Storify, I've known about Flipboard, it's just to me it takes too much time[...] I'm like but if I have so many apps running at the same time I have only one pair of hands you know, like how am I supposed to like put everything everywhere?

(Excerpt 4.16, Yvette, Interview 2)

I read and then I, like, okay, if it's really important I'll bookmark it, if it's not I'll just read and then the information goes into my brain. I will write down some notes in my like secret ##### yah, that's it you know, um, because to me it's a very funny thing, because to me I always feel that this piece of information even though I read it today tomorrow it will become obsolete anyway.

(Excerpt 4.17, Yvette, Interview 2)

The assessment goal in the assessment opportunity (ii) was for students to understand why quality matters in curation, after watching a video on Good Curation. They struggled to answer Yvette's questions on this, however. The challenge here could have stemmed from students' difficulty with the use of analogies in the video, as well as outdated concepts like a 'mixtape'.

In trying to explain to students why quality mattered in curation (excerpt 4.3), Yvette mentioned platforms such as Facebook, Twitter, STOMP (a somewhat notorious local 'citizen journalism' news site), and SGAG (an infamous local online meme community), in a clear attempt to use examples students could relate to. At the same time, she insinuated that many such platforms provided the junk/fast food equivalent of information, and the reason why students might 'spout nonsense' (i.e. garbage in, garbage out). She also struggled somewhat to distinguish clearly between news sources and the social media platforms where such news is often disseminated. Her discussion here could have been more detailed, and the analysis of exemplars from said sites could have been more persuasive to students, who might resist any insinuation that they consume 'nonsense'.

In assessment opportunity (ii), it is illuminating to examine Yvette's own understanding of information literacy as revealed through her attempt to unpack it for her students. Information literacy is complex for both adults and children alike, and it was probably too much to expect that a video utilising food and music analogies would clarify it easily for her students. While there is no evidence that her understanding of what constitutes quality information sources is inaccurate, it may lack the clarity necessary for her to carry out this task successfully with her students. In other words, Yvette's own digital literacies in the assessment opportunity may have hindered her success in two ways. The first way is as described in the analysis of assessment opportunity (i) above. The second way stemmed from her (potentially) incomplete understanding of digital information literacy.

When pupils were unable to explain why quality mattered in curation (a topic raised by Good when he compared Googling to fast food), Yvette took the opportunity to discuss this briefly (excerpt 4.3). However, her conflation of news source with social media platform may not have helped the pupils understand what constituted quality. It also took about three minutes for Yvette to realise that the class did not get 'mixtape'. As already mentioned, the 'digital native' is largely a myth (White & Le Cornu, 2011); however, technological generation gaps are real. The pupils' uncertainty seemed therefore to stem both from language proficiency and Yvette's lack of consciousness of such gaps.

In assessment opportunity (iii), Yvette wanted to check the students' understanding of criteria applied to the curation processes of collecting, selecting and organising. This proved to be a difficult task for the students and Yvette got very frustrated as a result. Yvette chose to use Google Docs for students to do collaborative writing in groups. The groups then shared the links to the Google Docs on Edmodo, which was a Facebook-styled platform for teaching and learning. The advantage of this (as compared to the strategy used in the first two assessment opportunities) was that Yvette could monitor the students' progress by accessing their Google Docs via

Edmodo.

At the same time, a lack of familiarity with the constraints of Google Docs, specifically as it worked on the iPad Google Drive app, meant that the lesson was not as productive as it could be. Had Yvette been aware that the app did not support tables on Google Docs, she could have picked an alternative (such as Google Sheets, or eschewing the app in favour of the browser). It was possible that Yvette was unaware of the 'make a copy' feature that could be used with a template. It was not clear why she was initially displeased with the students' workaround of using Google Sheets instead, since it should not make a major difference to how the questions they generated would be presented. It is possible that because she lacked confidence in her students' abilities, she was inclined to jump to the conclusion that they had not paid attention to her instructions.

This activity highlighted a hardware-related issue. Yvette revealed in the interviews that she preferred students to use iPads because the small tablets did not block student faces (as would be the case had she used the computer lab instead) (excerpt 4.18). However, tablets are acknowledged to be less ideal for productivity if a lot of typing is required (unless a physical keyboard is connected). It was unclear if Yvette was aware of this trade-off.

People are like why don't you just book the lab or anything, but I'm like it's different because the, the way that computers is set up in the lab, it is very individual, it's very hard for group work. So with the iPads they can actually put it up and then they can write and discuss, look at something and discuss, that that's what I like about it.

(Excerpt 4.18, Yvette, Interview 2)

It was evident from Yvette's insistence that students follow her instructions strictly, and from her preference for tablets over computers, that she prioritised classroom management and control. At the same time, she clearly valued independent and

critical thinking as well, as seen in her criticism of her students (excerpt 4.5). This could possibly reflect on her own digital literacies: contrary to her pedagogical goals, she did not necessarily trust her students to possess the flexibility and adaptability to find workarounds to technological problems, perhaps because this was something she herself lacked. In other words, she found it difficult to always recognise digital literacies in her students when they demonstrated them.

The problems that occurred in assessment opportunity (iii) illustrated that both Yvette and her class were unfamiliar with some of the know-how and digital literacies needed to efficiently set up a collaborative writing activity in this context. When Yvette realised the problem with creating tables on a Google Doc, her response was to tell the class to 'just write first, just type'. I quietly commented to her then that the pupils were quite smart to have used Sheets instead, and indeed this showed that the pupils could on occasion be more resourceful. This incident demonstrated that the pupils did indeed have a flexibility and resourcefulness that Yvette lacked, perhaps stemming from their respective out-of-class digital literacy practices. That is, while Yvette might be more likely to take a paper-first approach to learning (thus 'drawing tables' on digital 'paper' – a case of 'old wine in new bottles'), the pupils had somewhat less of a bias. This incident suggests that cultivating desirable learner dispositions is more productive than being didactic, in the teaching of digital literacies.

In assessment opportunity (v), Yvette wanted students to mindmap questions on curation and learning (a follow-up activity from assessment opportunity (i)), in order to check their understanding on how the questions relate to each other. While Yvette was not satisfied by their progress, the students' mindmaps did show that some had useful insights.

Yvette did not use Edmodo to communicate her instructions to students or monitor their work while she was on leave. This seemed like a strange decision, since doing so would have given students the opportunity to ask questions that Yvette's work

buddy would not have been able to answer. Modelled on social media platforms such as Facebook, Edmodo aimed to facilitate communication, collaboration and community building in general. Yvette tended to use it only for students to share/submit work, however, which may reflect on how she saw the tool.

For mindmapping, students mostly used the Mindomo app on iPad, likely due to previous experience with it. While the choice of tool was unproblematic, it was not perhaps very clear what its role was in the workflow; students were expected to move from Google Docs/Sheets to Mindomo to Haiku Deck, in order to prepare their presentations, but did they understand the rationale behind this process? Was the use of a mindmapping tool really necessary? How were students expected to develop what they had produced using the different tools, to achieve the intended product? The process, at least to me as an observer, seemed quite abstract and therefore too challenging.

The Pinterest board shared on Edmodo was not only a rich source of information on curation by an acknowledged expert on the topic, but also served as an excellent example of what curated resources on a topic could look like, presented on a popular platform intended for this purpose. As such, it was unclear why Yvette chose to share it only at this point. Her explanation that she wanted the students to develop their questions first was not totally convincing, since she was aware of the students' struggle to understand the practice of curation. She pointed out that the students were meant to use the questions they generated to make sense of the Pinterest resources; however, without any examples of this modelled for the students, they would probably find it difficult to put into practice.

From the interviews, as I have discussed above, I knew that Yvette did not curate for her own personal purposes, and this might have impacted how well she was able to relate the practice to everyday life. This could also explain why she tended to explain the practice in more abstract terms. As a result, her formative assessments had limited success.

Yvette's relationship with learners – 'our students are famous for being spoon fed'

From my interviews with Yvette, I sensed hints of a sociocultural gap between Yvette and her students that she found hard to bridge, leading to frequent frustration on her part (excerpts 4.19-4.20). As someone who attended 'elite' schools, much of her expectations were perhaps shaped by her own experiences as a student. Because they had already frequently failed to meet her expectations, and she was herself still relatively new to teaching, it was perhaps unsurprising that the challenge of teaching and assessing something novel and complex like online curation would be further compounded. As an outsider and teacher educator, it was easy for me to see where her problems probably lay; at the same time, I could also empathise, because I was also a product of 'elite' schools, and had even taught as an untrained supply teacher in 'neighbourhood' schools, where I experienced intense culture shock.

...it's our kids' disposition, right? If it, you know, if they were in a better school where they would be more motivated.

(Excerpt 4.19, Yvette, Interview 1)

So I'm very interested in like art, artists, philosophy, I mean ##### and, um, but I like Continental philosophers and I like postmodern literature [...] like I introduced my kids to poetry readings and then brought them to like the museums because those are things that I love.

(Excerpt 4.20, Yvette, Interview 2)

From excerpt 4.21, we see that Yvette, to a certain degree, experienced a sense of dissonance with Singaporean society, as somebody with a more intellectual bent. The contrast in cinematic preferences—students favouring the DreamWorks animated film 'Mr Peabody & Sherman' over the indie culinary comedy-drama 'Chef'—serves as a metaphor for this cultural misalignment. While it is probably true that most Singaporeans lack the more high-brow tastes that Yvette had, this is a phenomenon

not unique to Singapore. Yvette's frustration over her students' choice of a youth-targeted film rather than one with mature themes (which should not surprise anyone) may indicate a deeper struggle with her role as an educator in Singapore.

I was showing my kids Chef, and then the kids like, Mr Peabody & Sherman, and it's like, like, you know they prefer Mr Peabody because it's like, it's more interesting [a student] said this is more interesting, nicer. 'What about it is nicer?' 'I don't know, because I understand it.' Just because you understand something doesn't mean it's more interesting, you know, actually it goes to show how childish their mind is, it's very underdeveloped, and it's like, I mean, Chef is, like there is some part where it's like, there's some American humour but, and it's because they don't catch dialogue, they don't catch good dialogue and they don't catch the nuance that comes with the dialogue, they only catch action, like most Singaporeans...

(Excerpt 4.21, Yvette, Interview 3)

As mentioned in the previous section, while she was obviously aware that her expectations could be unrealistic, she nevertheless found it difficult to manage her emotional response. On the whole, the interview data confirmed that she had a largely negative view of her students, which was also evident in the way she criticised them in class (excerpts 4.22-4.23). She viewed her students as lazy, unmotivated and lacking independence. She also thought that they were poor at project management.

...like my kids actually, they're so lazy. They just pull out resources from Wikipedia...

(Excerpt 4.22, Yvette, Interview 1)

They're lazy to annotate and find; they, they want instant gratification...

(Excerpt 4.23, Yvette, Interview 1)

While the students might indeed not be the most hardworking ones, it is difficult to tell if the above criticisms can be completely attributed to laziness. It is possible that the students simply lacked the digital literacies to leverage resources, and there was insufficient scaffolding and guidance in class to help them do this in a manageable way.

In excerpts 4.24-4.26, it is apparent that Yvette struggled to understand her students' lack of drive and desire to learn. To her, both extrinsic motivation (in the form of grades) and intrinsic motivation (in the form of curiosity) had failed with her students, and this was something that perhaps would not have happened if they were 'in a better school'. Examination pressure is of course more intense in 'better' schools, but this having been criticised for leading to poor mental health and killing creativity, it is debatable as to whether this is a good method to motivate students.

...it's our kids' disposition, right? If it, you know, if they were in a better school where they would be more motivated.

(Excerpt 4.24, Yvette, Interview 1)

...the exams motivate them right. To study or at least appear to study. Yes, yes. But this should all the more motivate them because they can, 30% is a lot. Right. You can actually make or break, right? Yeah. With 30% it can pull you up. [in reference to the previous group project]

(Excerpt 4.25, Yvette, Interview 1)

What frustrates me is not the fact that their, okay, their laziness, and their, their, y'know, laissez-faire attitude is one thing, but it's the fact that they have no drive for anything or passion for anything[...] Now we're giving you a chance to explore and you don't want to explore, you are even too lazy to explore...

(Excerpt 4.26, Yvette, Interview 2)

A recurring theme in the interviews and her comments to students was their perceived lack of independence and initiative (excerpts 4.27-4.28). Having attended 'good' schools herself, she probably struggled to relate to the less academically and intellectually driven attitudes of her students. To be successful in the very examination-oriented Singapore education system, self-discipline and hard work are critical qualities, and so despite the very different school she was teaching in, it was difficult for her to dial her expectations down. To some degree she blamed this on her colleagues.

They are so used to... being told what to do at what time, that, that, this, this concept of making decisions is so foreign to them.

(Excerpt 4.27, Yvette, Interview 2)

[name of school] students are known, famous for being spoon fed.

(Excerpt 4.28, Yvette, Interview 3)

Excerpts 4.29-4.30 show how Yvette not only thought of the students as being overly reliant on teachers but also that this was a result of being coddled by the teachers. In a sense, this is linked to the next element of external constraints, as high-stakes national examinations have the inevitable consequence of strong pressure on the school to perform academically. In 'non-elite' schools where students are less able to learn independently, teachers would be more inclined to 'handhold' their students.

...before exams teachers really love to hand-hold the students, and I mean ultimately they feel responsible if they don't...

(Excerpt 4.29, Yvette, Interview 3)

I feel that if teachers came down a lot harder on these kids, um, harder in the sense not by trying to fit them into a mould, but harder in terms of their expectations of these kids, these kids would rise up, and if all subject teachers

had that same philosophy, I think their improvements would be a lot more.

(Excerpt 4.30, Yvette, Interview 2)

In excerpts 4.31-4.33, we see that Yvette felt strongly that her students were poor at project management because they lacked time management skills and flexibility. The examples mentioned here, of insisting on synchronous discussion on Skype, and not knowing to switch to pen and paper when technology fails, could also be attributed to a lack of digital literacies, since they entail an understanding of the limitations of digital tools. We have also seen in her lessons that Yvette had a tendency to micromanage how her students carried out their tasks, and dictate the tools used. In assessment opportunity (iii), some students had switched to Google Sheets instead of Docs for their tables, and were scolded by Yvette for this; granted that Yvette misunderstood the situation then, but there was clearly a half-unspoken expectation that students follow instructions strictly. In such an environment, being 'flexible' carried risks.

They think that they must all Skype at the same time and then spend like hours discussing. I think time management in terms of deciding on something, it's not the be all end all, but just locking it down and then moving on, they don't know when to move on, when to discuss, and they don't know if their discussions are just going in circles, so all these contribute to the lack of time management.

(Excerpt 4.31, Yvette, Interview 2)

My frustration stems from the fact that they don't know how to task manage, work backwards, divide and conquer, um, you know, like put pen to paper when need to, that kind of thing, like switch, basically being adaptable, like even if it's two per- two person meeting the meeting could still carry on.

(Excerpt 4.32, Yvette, Interview 2)

they don't know how to adapt to the situation so if this is slow, sometimes it's also lazy you know it's like oh this is must I must do it on iPad so I waste time you know by trying to figure it out but they don't realise that that they can actually discuss, put pen to paper first and then go back which is a lot faster so I think the adapting from different mediums is something that they still need to get used to, it is not like oh either journal or or iPad, it has to be both you know and how do we use two together.

(Excerpt 4.33, Yvette, Interview 2)

As already mentioned, coming from a different type of school (and perhaps from a different socioeconomic class from many of her students as well), it was difficult for Yvette to relate to her students on multiple levels. Aside from struggling to understand what motivated them, she also had different tastes and interests (perhaps even taking into consideration the age gap), and this affected her view of her students as learners. She not only saw her students as lacking in knowledge in and appreciation for the more high-brow and intellectual, but also in self-awareness and desire to expand their horizons (excerpt 4.34).

...for me it's like, if I were them, I will want to expose myself to more things you know, like sort of give it a chance, but sometimes I feel like they are they have their own limiting, they limit themselves, they are the ones who will form that barrier over themselves...

(Excerpt 4.34, Yvette, Interview 3)

In the previous analysis of her assessment literacies, we already saw her doubt that students from such a school would be able to handle a Blake poem in an examination. Elsewhere in the interviews, as discussed earlier, she admitted to being more interested in high culture (Continental philosophers, Dadaism, postmodern literature, museums and Singapore films) than pop culture (manga and K-pop). In [section 4.1](#), we saw how she struggled to accept the students' preference for an

animated comedy over a critically acclaimed film. I asked then if language proficiency was the students' issue, since she mentioned the difficulty with American humour, but she insisted that it was due a lack of exposure and a reluctance to move out of their comfort zone. It might in reality be both, since the students' lack of exposure to this kind of (American) English media would also affect their language proficiency in the sense of more idiomatic American English.

To summarise, Yvette came from quite a different world (educationally speaking) from her students, and while she was aware of this, she still struggled to come to terms with how her students were not only very different from her, but also uninterested in becoming more like her (in terms of attitude to learning and broadening their minds). Having attended 'elite' schools herself, she had higher expectations of student motivation and independence that did not match the realities of her students' backgrounds and experiences. This negative attitude coloured her approach to teaching and assessment in this curation project, and made adjusting her teaching approaches and expectations more painful. This affective aspect of assessment is perhaps too often underestimated in its impact.

External constraints – 'the school Wi-Fi is bloody slow'

The final element concerns the constraints limiting Yvette's digital assessment practices, which had an impact on the success of the curation task project. These can be divided into two main types: technical limitations and school/education system constraints. As always with the use of digital technology, unexpected problems can delay and otherwise affect planned activities. In the third assessment opportunity, for instance, because both Yvette and the students were unfamiliar with the affordances and limitations of the Google Drive app on iOS, time was wasted on trying to create tables when this was actually not possible. This further led to a misunderstanding between Yvette and the students; the mood that this resulted in was no doubt uncondusive to learning.

The strain that use of technology put on an already tight schedule was something that Yvette was very conscious of. During our interviews, she brought up, for instance, the very slow internet connection the students had to use, and the lagging of the iPad model provided by the school (excerpt 4.35).

Last semester I had a lot of problems with uncharged iPads. This semester I had problems with the GPRS signal [...] And then, um, the Google Drive and the Google Docs, so when kids use the app they cannot logon [...] and then Edmodo is sometimes laggy on the app and then they have to like log out and then, you know all this takes time because our iPads are not exactly very fast..

(Excerpt 4.35, Yvette, Interview 2)

Having to resort to using only the free version of apps also held students back (excerpt 4.36). This was presumably because the school budget did not allow for paid subscriptions.

...for example Popplet, we didn't subscribe to the paid versions, right, so it's like they had to screenshot the thing and then they couldn't go home and collaborate and continue. I think that's one, that's one of my gripes, um, with, with apps and all that. Sometimes if you don't pay and then you can't really collaborate and it's a little bit messy.

(Excerpt 4.36, Yvette, Interview 2)

The availability of devices and the internet both in and out of school was another issue that was brought up. While her learners seemed to have internet access at home, not all had access to suitable devices. Some only had 'dumbphones'. While students could use the computers in the library after school, there was a time limit of 30-60 minutes per session. If students wanted to use the Mac lab or borrow the iPads after school, Yvette had to supervise for security reasons.

On the topic of phones, Yvette also pointed out the hypocrisy of the school

disallowing students from using them, when there was no such restriction for teachers. Interestingly, she linked this to the observation that students sometimes did not take the initiative to, for instance, check the dictionary using their phones. Her students, while allowed to use their phones, did not abuse the privilege. Her observation highlighted another way that the school constrained the development and assessment of digital literacies. Another reason for the lack of time for the curation project was that time also needed to be allocated to other work, in particular examination preparation, as evident in excerpt 4.37.

I feel that if it were up to me, I would, I would use, I would use the time taken to prep students for exams for this[...] You can see how how, um, or rather I can feel the press- there is so much I wanna do with the kids, but exams are in four weeks, you know, I got to be realistic as well yah, yah and I don't know if the kids are also able to sort of put the skills together.

(Excerpt 4.37, Yvette, Interview 2)

Here, she is referring to the fact that while she and Jen hoped that the curation project would help students develop 'enduring understandings' and metacognition that would also feed into their ability to tackle examination tasks, the explicit teaching and practising of actual examination tasks was still necessary. In an examination oriented education system like Singapore's, examinations that would prepare students for the eventual high stakes national examination would still have high priority. This led me to wonder if there was a need to justify digital assessment as something that would achieve the same eventual aims, same learning outcomes, as the pen and paper national examinations; that is, to play down the fact that the constructs are essentially different — this tension can be a hindrance to the development of a digital literacies curriculum.

On the whole, teachers in Singapore (as in many other countries) are overworked, leading to a reportedly high turnover rate (Ang & Koh, 2022). Yvette in the interviews

pointed out that her workload simply did not allow her to spend more time on guiding and advising students, or even leave comments on students' work regularly (excerpt 4.38). It is especially difficult for Yvette, because, as mentioned in section 4.1, she wanted to draw a clear line between work and personal life, and the teaching profession in Singapore was simply not compatible with such a lifestyle.

Um, hard for me to leave comments, uh, regularly because there's not enough time, or I mean, like there it is always time at home now, but it's like not in school, you know?

(Excerpt 4.38, Yvette, Interview 3)

Yvette faced numerous substantial constraints that hindered her efforts to implement effective digital assessment practices. She had to contend with various technical limitations like slow internet access, outdated iPads, and logistical issues using apps. Additionally, the school environment imposed restrictions like a tight scheduling priority on exam preparation and limited hours for device use after school. Resource restrictions prevented paid app subscriptions that could better support collaboration. Some students also lacked adequate home devices. Finally, as is common for teachers, Yvette's large overall workload made it difficult to provide sufficient guidance and feedback to students. All of these external factors from both technical and institutional domains presented major challenges that Yvette had to navigate as she sought to incorporate digital tools and assess student work to develop their digital literacies within the constraints of the education system.

Summary

This chapter provided an in-depth study of Yvette's digital assessment practices during the curation task. The first part of the chapter focused on the classroom observations, describing assessment opportunities across the four main stages of the curation task. Analysis of assessment opportunities revealed breakdowns in understanding on the student side, and frustration on Yvette's side, which ultimately

led to an unsatisfactory level of task completion in relation to the learning objectives. Specific issues that were noted in the observation included:

1. Learning intentions and criteria were not always clearly communicated, leading to confusion among students.
2. Classroom discussions and tasks lacked structure and scaffolding to promote meaningful participation and use of digital tools. Feedback to students was generalised and did not effectively address misconceptions.
3. Structures for group work and online collaboration were ineffective, hindering productive collaboration.
4. Students showed limited ownership over their learning and relied heavily on Yvette to clarify answers and tasks.

To understand the elements that influenced Yvette's assessment practices, I drew together data from interviews – to include Yvette's voice – with further observational data. From this perspective, it was evident that a complex interplay between Yvette's assessment literacies and her digital literacies was at the root of some of the challenges observed in the assessment opportunities. In addition, Yvette held quite a negative view of the students, both in terms of their capabilities and their levels of engagement/motivation, that appeared both to deepen her frustrations, and to influence how she related to the students in setting up the task. Finally, Yvette noted a number of external constraints that led to further technical problems during the activity.

Taken together, the case study of Yvette paints a picture of a teacher who struggled, herself, with digital literacies, working in a classroom environment that she found frustrating and minimally resourced. This case illustrates that the (non)success of the curation task was not purely related to the students' lack of ability, or indeed to Yvette's lack of assessment literacies (indeed, Yvette seemed highly aware of her own limitations as an assessor). Rather, the success of the task was influenced by a complex interaction between Yvette's digital and assessment literacies, her attitudes

towards her students, and the type of resources she was provided. These elements created an atmosphere of 'struggle', in which neither Yvette nor her students were able to achieve the learning goals.

Chapter 5: Jen's class

This chapter provides an in-depth look at Jen's secondary school classroom and her approach to assessing students' digital literacies through a curation project. It begins by summarising key insights from an initial interview with Jen, where she outlines her goals and expectations for the upcoming project. The chapter then analyses classroom observations across three stages of the project: Understanding Curation, Haiku Deck Presentations, and Storify Curation. Jen's formative assessment practices are examined using the framework of Wiliam and Thompson (2008). Next, the interplay of elements affecting Jen's assessment approach is explored, including her own digital literacies, assessment literacies, relationships with learners, and external constraints faced. I also attempt to uncover insights into how Jen leveraged alternative assessments and technology to develop students' digital literacies, despite limitations like large classes and norms against peer assessment.

5.1 Insights from the initial interview

Curriculum is not something that's already set and then given to you. Cuz that's not really curriculum. Curriculum is a process, so I want them to be part of the process.

(Excerpt 5.1, Jen, Interview 1)

In line with the methodology outlined earlier, Jen, like Yvette, was interviewed thrice: pre-project, mid-project, and post-project. It is crucial to grasp Jen's initial perceptions of the project, as they not only offer a valuable context for her strategies and expectations but also shed light on her anticipated challenges. Additionally, these initial insights provide a useful reference for interpreting Jen's perspectives shared in the later interviews (refer to [section 5.3](#)).

In the first interview, Jen discussed her earlier teaching practices, specifically her focus on visual literacy, which was a pivotal part of her assessment approach

(excerpt 5.2). This excerpt demonstrates how she used visual literacy as a means to facilitate students' comprehension of complex concepts, supplementing traditional linguistic approaches.

When I first started, right, I was very focused on using visual literacy, partly because I felt that visual literacy was a way to get the students to think of concepts, y'know, very, very important concepts and ideas in writing or even in speaking, which if I had started with just the linguistic aspect of it I don't think the students would have understood what I was trying to tell them.

(Excerpt 5.2, Jen, Interview 1)

She further elaborated on the specifics of her approach in recent years (excerpt 5.3). This approach aimed at using visual elements to help students represent ideas, sequence of events, and characters' perspectives and feelings.

We did a lot of storyboarding. We did a lot of photojournalism. So it used y'know visual concepts like angles, camera angles, perspective and all that, to talk about it in terms of, y'know, representing an idea, representing a sequence of events, representing a particular character's perspective, feelings, things like that.

(Excerpt 5.3, Jen, Interview 1)

Throughout the initial interview, Jen emphasised how her teaching approach had evolved over time (excerpt 5.4). This statement reflects a shift in Jen's pedagogical perspective; she moved from using visual literacy as an auxiliary tool to integrating it as an integral part of the creative process.

I wanted the students to explore this at a deeper level, meaning that instead of using [visual literacy] just as scaffolding for their writing, I wanted them to see it as part of the whole process of creating something[...] I wanted them to see that when you're creating something, maybe you're crafting a paragraph

about something and it can be written, the final product can be written, but y'know one way of tapping into your ideas or generating or brainstorming ideas, or even getting inspiration is sometimes through the images.

(Excerpt 5.4, Jen, Interview 1)

Regarding the then upcoming curation project, Jen expressed her anticipation and outlined her expectations. She perceived this project as another step in her journey of pedagogical evolution and innovation. However, she also acknowledged potential challenges, particularly the need for shared understanding among the teachers involved (excerpt 5.5). This excerpt amplifies the importance of teacher collaboration in the process of planning and designing assessments.

I usually have some concept in my mind already about how it's supposed to be. And then I will go there and I will get the teachers – I want them to understand because they have to use this in their teaching. [...] They will have to get the students to understand, unpack [...] So they know that whatever they are being taught or whatever they're learning or doing in the classroom, it helps them to arrive at the outcome, and the kind of grade that they are aiming for.

(Excerpt 5.5, Jen, Interview 1)

Jen's reflections on her past experiences with digitally-mediated assessments and her expectations for the curation project provide valuable insights into her pedagogical philosophy and practices. In particular, her adaptability, learner-centred approach (excerpt 5.1), and digital literacies were evident in the lessons that I observed, as will be illustrated below.

5.2 Analysis of classroom observation and artefacts

In this analysis, I describe and analyse Jen's classroom assessment practices during the curation project, to address Research Question 1 in part:

RQ1b: How do teachers' formative assessment practices impact the assessment of digital literacies?

As with Yvette, I conducted participant-observation in Jen's classroom over a period of about two months. In this section, I describe key 'assessment opportunities' (Hill, 2012) from these observations, identifying what students were doing in the class and how Jen responded. I divide my observations according to these three key stages of the curation task:

- Stage 1: Understanding curation
- Stage 2: Haiku deck presentation
- Stage 3: Storify

(Jen's original instructions to students are reproduced in Chapter 3 (figure 6), and her unit plan for teachers is reproduced in Appendix A.)

This section describes the practices observed and analyses them using Wiliam and Thompson's (2008) five strategies of formative assessment.

Stage 1: Understanding curation

The first stage of the curation task - Understanding curation – comprised two sub-stages: introducing curation and exploring curation. I will first describe the classroom activities in each sub-stage, and then describe Jen's formative assessment approach.

Introducing curation

I was able to observe Jen's first lesson on curation (something that was not possible with Yvette). In this lesson, Jen introduced the curation project, and the concept of curation to her class using comic books and trading cards. As this was a double period, there was time to start the class off on Task 1 Defining Key Concepts and Asking Essential Questions, posted on Edmodo with links to various resources on curation (figure 25). In the last quarter of the lesson, the pupils explored the

resources on curation, took collaborative notes on them, and worked on developing some preliminary questions on curation.

In Jen's class, this first part of stage 1a, 'Introducing curation', included two digitally mediated assessment opportunities, observed in the first lesson:

- i. Answering the question of what criteria Jen used to curate her comic books and trading cards collection. (6 August 2014)
- ii. Generating preliminary questions on curation. (6, 7 August 2014)

Prior to assessment opportunity (i), Jen had created a sub-group as a category on the 2G Edmodo group, where she posted the introduction to curation and Task 1 on Edmodo (figure 25) before class, and told the pupils to read the instructions first and ask her any questions they might have about the task. This was to be an 'FAQ time' (referring to Frequently Asked Questions). They used iMacs and iPads to access Edmodo and to take notes on Evernote or Google Drive. Each group of five to seven pupils had two iMacs to share, as well as two or three iPads.



Ms. Jen to Online Curation Unit (Sec 2G English)

Introduction: What is Curation?

I have attached links that will be useful for your groups as we begin this unit on ONLINE CURATION as a 21st century literacy.

You should start with the LINKS i have given. Use these as STARTING POINTS: i.e. you may develop questions as you explore and STUDY closely these links, and this may lead you to SEARCH for more information. You can INCLUDE any other useful resources you find on your own, BUT do note the time limit and format of the presentation.

Use DIIGO to bookmark, annotate and SHARE resources. I have collected some useful links and saved in diigo. Check the tags for relevant resources.

Task 1: Defining Key Concepts and Asking Essential Questions

- a) Key Concepts - What key concepts do we need to DEFINE and EXPLAIN?
- b) Essential Questions - What are essential questions? What essential questions do we need to ask to help us explore this topic?
- c) Organising Your Topic for your presentation

Presentation: You will create a group presentation to share and explain your group's learning tomorrow.

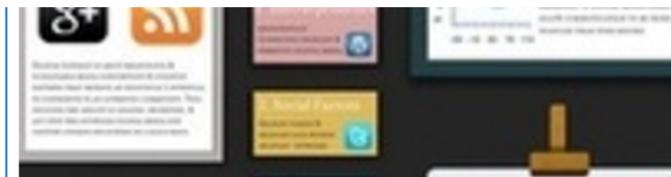
- Presentation format and TOOL: You can USE Haiku Deck. Take into consideration the VISUAL format of the presentation tool. The IMAGE is CENTRAL to the story you want to TELL. Your oral explanation SHOULD focus on EXPLAINING what IMAGE REPRESENTS or MAIN IDEA / KEY CONCEPTS.

- Each Slide should be TIMED for no more MORE than 20 secs - this means it should ONLY appear for 20secs and the speaker has ONLY 20 secs to make your POINT. MAX number of slide is 20.

- Post your LINK to the slide as an edmodo post and any OTHER documents / links you want to use as USEFUL handouts / notes for the audience to READ on their own time. Think about WHAT should GO INTO these NOTES / HANDOUTS /LINKS , and the PURPOSE: i.e what can't be included in the scope / time of your live presentation BUT still useful / relevant / interesting for audience to explore on their own.

- Audience Response: Pls POST as reply to the edmodo POST by the GROUPS. Groups have to THINK of how to respond to these questions or comments

- Think of how to GET your audience to RESPOND and INTERACT: What INTERACTIVE activity can you include for them to DO? eg if you are using a VIDEO, are you going to use a TOOL like Vialogue to get their response? [Show Less](#)



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Figure 25 Jen's introduction to curation and Task 1 on Edmodo

In this assessment opportunity, Jen had brought from home part of her personal comic books and trading cards collection, already in hastily curated sets. The groups were to take a set each and figure out what criteria Jen had used to curate them. They could post their answers on Edmodo. Jen reminded students that while curation was about collection, they are not equivalent. Jen monitored the discussions and answered questions. She hinted to the class that they should pay attention to the design of the comics and any numbers that they saw. Students were clearly intrigued. Some googled for help even though Jen did not want them to do this but to rely on what they could see.

The class struggled with this activity as they were not familiar with the comic book sub-culture in general. After about 25 minutes, Jen revealed her curation themes and criteria for arranging the comic books and trading cards (primarily rarity of the comic, due to different superheroes appearing in the same comic, uniqueness of artwork style and texture, limited editions, judgement which was made possible due to her expert knowledge in this area) which the class had not got exactly right (see figure 26 for examples), though they had touched on aspects of her answers. As she explained how she curated each set, she held up examples for the class to see. She emphasised that collections must have themes.

 [redacted] to **Online Curation Unit (Sec 2G English)** Pin Post

The collection was the same company and trademarks. The number of the card was not in sequence and forms a full story

Like (1) • 2 Replies • Share • Follow Aug 6, 2014

 [redacted] said Aug 6, 2014
By [redacted] group

 [redacted] said Aug 6, 2014
<https://docs.google.com/document/d/1SStq8Kcf7...> by [redacted]

 Type a reply...

 [redacted] to **Online Curation Unit (Sec 2G English)** Pin Post

there are exclusive content related to the comic
' Hologram trading card '
' sticker book '
' glow in the dark cover '

Like • Reply • Share • Follow Aug 6, 2014

 Type a reply...

 [redacted] to **Online Curation Unit (Sec 2G English)** Pin Post

Collection of Comics
Patterns: Heroes, same company, made from US, Canada. same author.
Evolution of the series and characters.
Done by: [redacted]

Like • Reply • Share • Follow Aug 6, 2014

Figure 26 On Edmodo, pupils' guesses on the criteria/themes Jen used to curate her comic books and trading cards

Jen was able to make use of this activity to lay the ground and prepare the class with some essential questions to get started with for assessment opportunity (ii) (excerpt 5.6).

So what is curation? What are the processes that go into curation? I already told you, first step, you have to select. Ok I've given you one key word already, select. Second step, you select you have to ask yourself what? How to select, based on what? Based on what? There's so much, sometimes there's limitless right but I cannot collect limitless things. Either there are some limitations in terms of space, uh money, that's for collecting comic books. What about information? What about when I ask you to collect information, knowledge. How do you go about doing that? How do you go about collecting knowledge? I'm not asking you to collect comic books, I'm asking you to collect knowledge, and information. How do you collect information that becomes knowledge and not rubbish information. There's a lot of information online. There's a lot — more than you can ever ever ever collect, so I ask you this question, same as me, what should I collect, what should spend time collecting, what is valuable, ok? So those are the questions that you are, have to explore deeper. What is worth collecting? What should I collect? What is valuable? What makes information you collect into knowledge?

(Excerpt 5.6, Jen, assessment opportunity (i))

This activity was very successful at engaging the pupils and arousing their curiosity, even though they were not familiar with comic books. Discussions were lively and mostly on-task, and pupils were motivated to ask Jen questions and use Google to search for clues. One pupil even asked to read the comics after the activity had ended.

Exploring curation

In assessment opportunity (ii) the class explored resources on curation that Jen had shared on Edmodo, and generated questions about curation. Jen suggested that each group distribute the work among their members and collaborate on a shared Google Doc. Jen monitored (online and by walking around) as they did this. They were told to use the questions Jen had provided previously (excerpt 5.6) to start them off. While monitoring and guiding the pupils, Jen gave technical advice, pointed out pupils' strengths and weaknesses, and focused particularly on the concept of filtering.

During this activity, the students were generally engaged and on task, as they are usually in Jen's class. There was an audible buzz. In addition to using Google Docs and/or Evernote, most students also did their rough notes on paper. Jen also recommended VideoNotes for those who watched video resources. As there was not enough time, they would have to continue the activity the next lesson.

A notable number of digital tools were involved in this activity:

1. Jen shared the introduction and task with links to resources on Edmodo (figure 25)
2. The resources included a curated collection of resources on Pinterest (figure 16), a video on Vimeo (figure 27), and a Storify (figure 20)
3. Jen recommended the use of Diigo (to collect, curate and annotate links) and Haiku Deck (to create presentation slidedecks) in the task instructions, and Google Docs (collaborative), Evernote and VideoNotes (figure 27) for notetaking in class

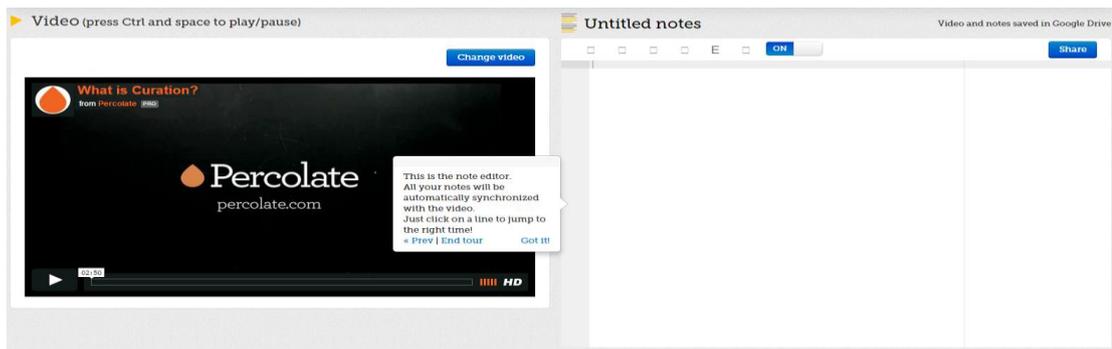


Figure 27 VideoNotes app interface

Jen did not ban the use of pen-and-paper, but encouraged the use of free tools that allowed collaboration (e.g., Google Docs rather than Evernote). Notes on Evernote (free accounts) and VideoNotes could be shared, but not simultaneously edited. VideoNotes was considered to be useful enough that Jen took time to walk one of the groups through installing and using it. The pupils were not able to find the app initially, which gave Jen the opportunity to model some troubleshooting. As she had encouraged them to split the workload among group members, a couple of groups used their shared Google Doc not only to write collaboratively, but also to share the links to their Evernote and VideoNotes notes. One group shared the user name and password to the group Diigo account there as well. This allowed group members to use their preferred tool but still share their work, and at the same time keep everything in one central, easy to access location, like a digital binder.

There were a couple of technological hiccups: some of the pupils had not remembered to bring their earphones and so watched the videos without them and distracted others, and the already slow and/or unreliable internet connection (both the school network and the data SIM cards in the iPads) was not able to support the smooth streaming of so many videos at the same time. Familiar with these limitations, Jen had obviously instructed pupils to always have their earphones with them and was ready to partially mitigate the internet problem by sharing access to her own mobile WiFi modem (though this could only support three to four devices at once). (This would prove to be one of several instances where Jen demonstrated her

high level of preparedness and ability to tackle digital hurdles, at a time when internet technology and school facilities were not as advanced as they are today.)

The buzz of the classroom showed that the class continued to be engaged, although this was not uniform. At one point, Jen warned one smaller group of four to put more serious effort into their work, emphasising the importance of the attitude of the group. Later in the activity, a pupil pointed out to Jen that her groupmates were going off-task and talking about something else (their Mathematics homework, among other things), leading to another warning from Jen. The same pupil also took the lead in starting discussions with groupmates on their curation topic, even though she was in turn warned by Jen not to 'jump the gun'.

This assessment opportunity continued in the second of Jen's lessons on curation that I observed, on 7 August 2014, and so remains part of Task 1. However, Jen gave them a more immediate goal on this occasion, which was to give an informal presentation on the questions they had generated about curation. The aim was, as Jen mentioned at the beginning of the lesson, to have a 'check' on what the pupils understood and what questions they had. In this lesson, the pupils had the iMacs but not the iPads.

Jen reminded students who had been absent for the last lesson (due to hockey practice) that they can always catch up on Edmodo. Jen had posted extra resources on comics over the night for them to read in their own time. She designated a student in each group to be their 'reader', so that students would be forced to read in turn. Each week a different student in the group would read, annotate on the class Diigo account and summarise for the group. This was to encourage students to read.

Jen told students that they would have 10 minutes to prepare to present (though eventually they were given 15). She advised them to use Evernote as it could be used with a Chrome browser extension, Evernote Web Clipper (figure 28, extension button circled). This was a button that allowed users to 'clip' webpages or parts of

webpages, annotate them, and save these 'clippings' to a chosen Evernote notebook. It could also clip video stills this way (by pausing videos at the desired moment). This would be faster than copying images or making screen captures to be pasted onto a Google Doc. As previously noted, Evernote did not allow collaboration on free accounts, and so the groups would have had to appoint one member to do this. Evernote allows you to annotate on clipped images, and one group (R4) did exactly that. Despite this advice, most groups continued to use primarily Google Docs; only two of the eight groups which posted on Edmodo used Evernote to present. Walking around I observed that one group (R2) embedded a video into their collaborative Google Doc, while another (R3) embedded images onto theirs. I did not observe Jen demonstrating how to do this, but it is possible that she had done so in earlier lessons; the students could also have figured this out themselves.

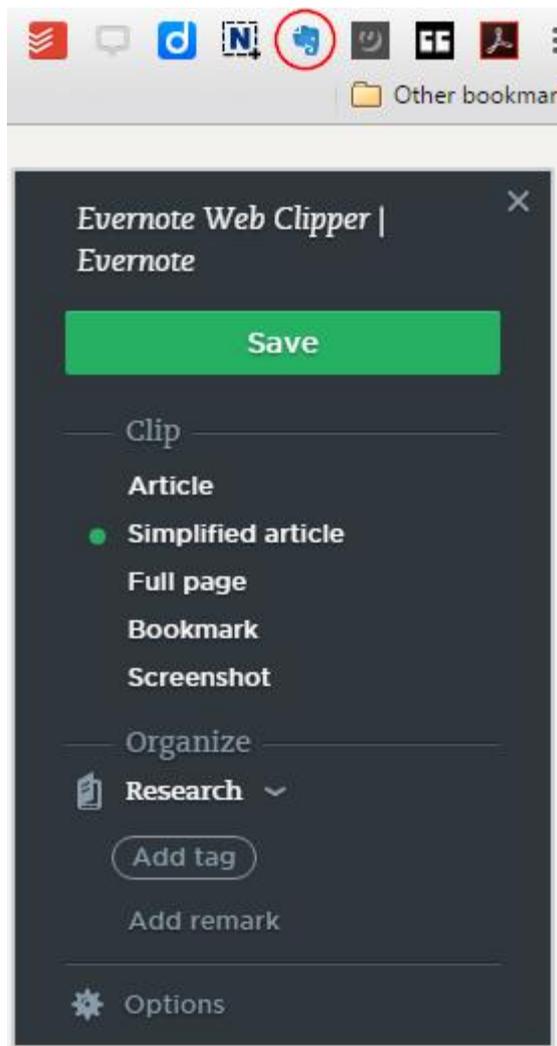


Figure 28 Evernote Web Clipper Chrome extension

As time was limited and Jen took time to give feedback, only two groups were able to present, with George presenting first for his group (figure 29). After his presentation, Jen asked if we curated for ourselves or for others? And who might these others be? A student from R4 (GH) presented next. Jen picked the student whom she thought tended to speak monotonously ('I want you to practice your non-monotonous voice'), as this would give him some additional presentation practice. As the students presented, a groupmate would control the Mac linked to the projector, so that images and text could be expanded for easier reading. Generally, students found this easy to do.

Video



- How do people make connections between things
 - what are the things to be connected?
 - What does it mean by making connections
 - What do they mean by things?
- How do you know if the things are interesting.
 - What makes it interesting.
 - What make them think that it's interesting?
- How do they appreciate things
 - Will they value their things
 - How do they value it
 - Is the things very important to them ?
- How does curiosity motivates people?
- Does it motivate them in a positive or negative way ?
- Does curiosity does more than motivate people ?
- What kind of things people would ignore?
 - How the people get better at ignoring things?
 - What will happen if they lose the important information?
- How do they know what is good or bad?
- How do they know what is bad and what is good?
 - What makes them think that way?

Figure 29 George's group's Google Doc (edit date 7 August 2014)

Jen highlighted three important aspects of curation encountered in this (and the previous) assessment opportunity. The first is of (digital) exploration, which Jen touched on when telling the class that they had to stop their discussions and share whatever they had. As Jen pointed out, in exploration there is no predetermined endpoint (i.e., no right answer) (excerpt 5.7).

No right or wrong answers, you're still exploring. Yesterday, somebody, what's the meaning of exploring? This is exploring. You go in different directions, some, sometimes you get a dead end, sometimes you get stuck, sometimes you get some ideas, but you know, you can always um come back to it again, alright you can come back a few times, that's called exploring, alright? Exploring means that you don't ah limit yourself at this moment, ok? You're just getting more ideas coming.

(Excerpt 5.7, Jen, assessment opportunity (ii))

While Yvette in her assessment opportunity (i) indicated to her pupils that we curate more for ourselves ('it's not for the viewers, it's not really for people, I mean it can be for people, but it's more for ourselves'), Jen instead placed emphasis on curating for an audience. She emphasised this in her feedback to George's presentation, and reiterated it when GH from the second group presented (in reference to figure 30, which they had clipped for their Google Doc) (excerpt 5.8).

((TO GEORGE)) You said you must catch the audience's attention right, then let me ask you you curate for yourself, or for other people? And if you say that there's there are other people you curate for, who are these other people?[...] Do you curate for yourself, other people, or both, alright? And who are these other people? Your audience, who are they? How are you going to know how to attract them if you don't even know who they are, right?[...] How do you get their attention?

((TO THE SECOND PUPIL GH)) Ok, so you need to publicise. You can't just collect something and then just keep it in storage and that's it, finished[...] Is it like, word of mouth? If you say social media, it's sort of like word of mouth, right?[...] People retweet or or reshare your y'know[...] So that's related to audience. How do you reach your audience?[...] How do you attract them?

(Excerpt 5.8, Jen's class, assessment opportunity (ii))



Figure 30 5 Steps for Content Curation (Manaher, 2013)

Finally, Jen returned to the concept of filtering (excerpt 5.9), drawing attention to diagrams like figures 31 and 32 that other groups had clipped for their Google Docs. Filtering was not only an important concept in understanding curation, but also a useful analogy given pupils' familiarity with filtration from chemistry lessons. It is also central to information literacy and dealing with information overload.

But I do get everybody is talking about filter. Filter, filter, filter. And you notice it appears very frequently in a lot of diagrams [...] There's one part that's unwanted, there's one part that's wanted right, so that's basically what filtering is about right? There's a lot of information. [...] You separate the wanted from the unwanted...

(Excerpt 5.9, Jen, assessment opportunity (ii))

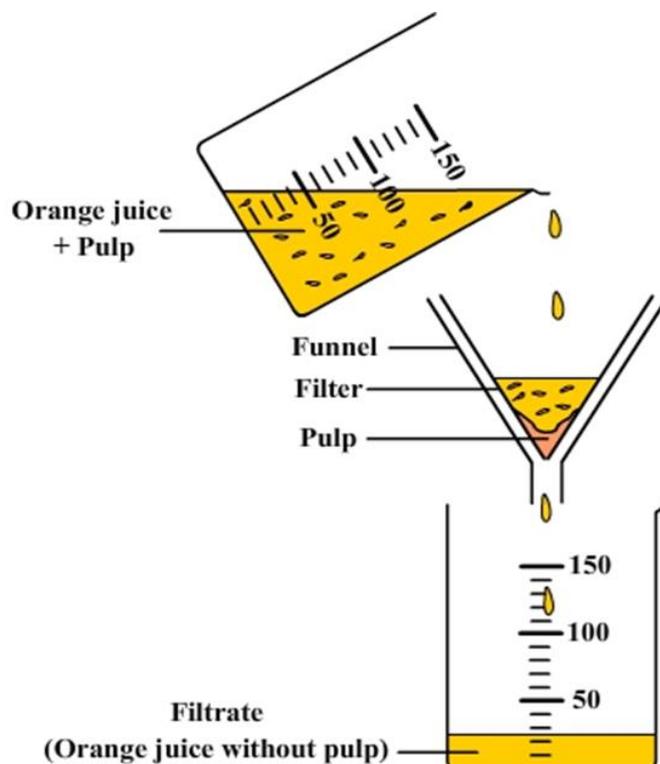


Figure 31 Filtration of orange juice and its pulp (possible source: <http://www.physics-chemistry-class.com/chemistry/filtration.html>)

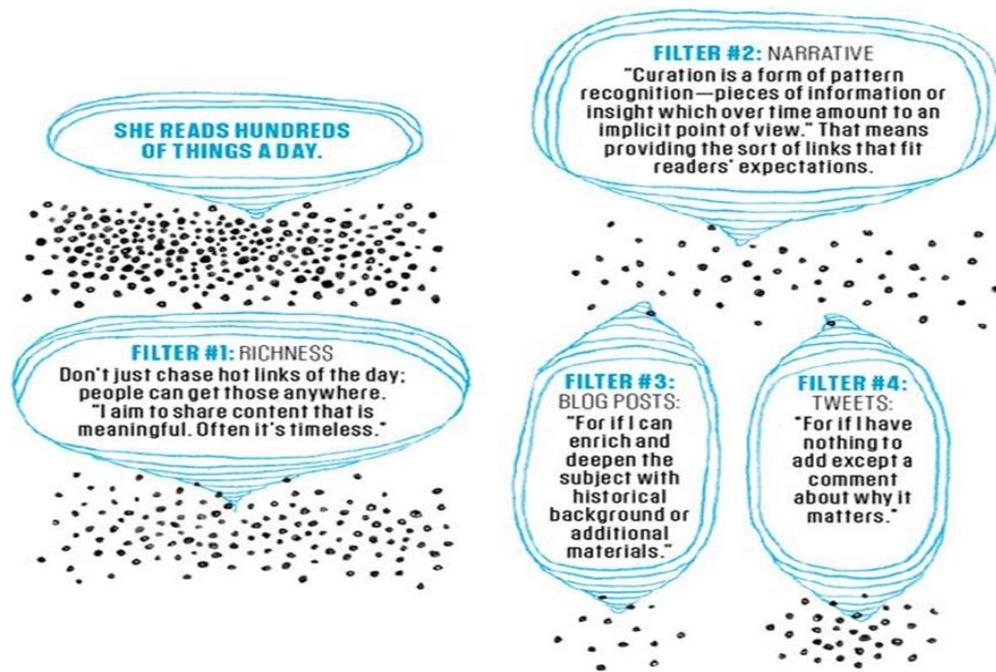


Figure 32 How Maria Popova shapes her daily output (Kaganskiy, 2012)

As before, the pupils were mostly engaged in their work, but some needed Jen to keep them on-task. Jen was herself frustrated at times by pupils who were more half-hearted in their efforts while working on the task (excerpt 5.10).

Yah, see, look at the difference. Are you listening? To your response and what she just said? What she has done is she has synthesised something that you gave in a fragment. And that's the problem, the two of you face exactly the same problem, that's why you're writing — you never can go beyond [fragment of ideas]. Not that you don't have ideas, I don't know what's stopping you from pushing your ideas and pushing yourself to further your ideas and express your ideas more clearly.

(Excerpt 5.10, Jen, assessment opportunity (ii))

However, even pupils who were more earnest might lack perseverance when struggling to understand difficult content. When asked for a 'working definition' of

curation, a pupil told Jen that they had given up on one they had found because they did not understand it (excerpt 5.11).

Pupil: Yeah, actually I was thinking of this, but then... we can't understand@
We can't understand so I have to find another...

Jen: No, explain it together! Don't just give up! Why you give up so easily?
Stick with what you have. Don't understand, you make an attempt to
understand. Don't give up like that, come on. And you are, you were also
supposed to post questions that occurred to you ask you go along, so talk
about it.

(Excerpt 5.11, Jen's class, assessment opportunity (ii))

Before Jen ended the class, she again highlighted the importance of the concept of 'filter' in curation and asked a pupil from another group to explain it to the class. She had to prompt several times to scaffold this, but was ultimately satisfied with the response.

Jen's formative assessment in Stage 1

Analysing the content through the lens of Wiliam and Thompson's (2008) five strategies of formative assessment yields the following insights.

1. Clarifying and sharing learning intentions and criteria for success

Jen clearly introduced the concept of curation to her students. She outlined the tasks for completion and the concepts for understanding. Her students learned about the criteria she used to curate her comic book and trading card collection, which provided them with a tangible example of curation principles. In addition, Jen encouraged curiosity and exploration, which are fundamental to the curation process.

2. Engineering effective classroom discussions, questions, and learning tasks

Jen involved her students in active learning tasks. These tasks included answering questions about curation criteria, generating preliminary questions about curation, and exploring resources on curation. She encouraged her students to collaborate and exchange ideas, fostering an environment conducive to classroom discussions. Furthermore, her approach of introducing curation through comic books and trading cards engaged students.

3. Providing feedback that moves learners forward

Jen provided real-time feedback to her students, guiding their understanding of curation concepts and practices. She also revealed her curation themes and criteria, helping students align their understanding with the actual concepts. Through this feedback, students could adjust their perceptions and better understand the concept.

4. Activating students as instructional resources for one another

By encouraging group work and idea exchange on curation, Jen enabled her students to become instructional resources for each other. Her students utilised a shared Google Doc for collaborative note-taking and idea sharing, creating a learning environment where students could learn from each other's perspectives and insights. There was, however, no structured peer feedback.

5. Activating students as the owners of their own learning

Jen promoted student ownership of learning by encouraging them to independently explore resources on curation, generate their questions, and share their findings with the class. The use of various digital tools, such as Google Docs, Evernote, VideoNotes, and Edmodo, for these purposes, supported this. By assigning different roles to students, she nudged students towards active contribution and taking responsibility for their learning. She did not implement self-assessment, however.

In conclusion, Jen's teaching approach aligned reasonably well with Wiliam and Thompson's strategies of formative assessment. It promoted an interactive and collaborative learning environment, provided constructive feedback, and fostered student ownership of learning.

Stage 2: Haiku Deck presentation

In assessment opportunity (iii), Jen had her class do their Haiku Deck presentations over three lesson periods. They were supposed to present on 13 August 2014, and as nobody was prepared, Jen allowed them more time.

At the start of class, Jen reminded the students that they were actually supposed to present their 20x20 (Pecha Kucha) on curation that day. She wanted them to do it on Haiku Deck, so that they did not do the 'boring' and 'old-fashioned' PowerPoint style slides that lack audience awareness and storytelling. This was a purely formative task as students would have the graded curation presentation to do in term 4, and they were expected to finish it during the September school holidays. She expected the groups to be better able to manage themselves after the experience of their last group project. She reminded the big groups of six that bigger groups are harder to manage and asked them if they were sure they did not want to split into smaller groups.

Jen found out that none of the students were apparently ready to present even though they were supposed to have prepared it the day before. It was not clear why they were not ready. She told the class that the criteria that was used for their project work could also be applied to this presentation. She would give them more time to prepare. She reminded them that when presenting on Haiku Deck they should be aware of its mode and medium. Haiku Deck is about visual storytelling (Jen had shared a new link on that), and therefore they had to choose their visuals carefully -- they should not make the same mistakes they made in their project work presentations. In anything that they do, such as their situational writing, they should

be aware of its mode and medium and choose their strategies accordingly. For instance, they could use body language when giving a speech, and they should not overuse rhetorical questions in their situational writing.

Jen modelled Pecha Kucha for them, with a couple of students to help her keep time and advance the slides. As they got ready, Jen recommended that the class take a look at the Haiku Deck (titled 'Crumble') one of the groups had created for their previous project work (the group had been asked to share the link on Edmodo), as a good example of visual storytelling, even though the script had been problematic because the analogy was never made clear. Jen's Haiku Deck presentation was titled 'Wings', an allegorical exploration that emphasised that a balanced and fulfilling life requires embracing both the positive and negative experiences, akin to how flight necessitates both wings. The class clapped when she finished. She asked them if her images told a story, and pointed out that it was a story without closure. 20 seconds is a very short time to make a point, so the image must get part of the job done. Students should come up with just one essential driving question about curation for their presentation since they essentially only had 6-7 minutes.

Jen now monitored the class as they discussed. She told them to look through their notes on curation to find one essential question they wanted to look at. They should not plan their presentation until they had found one. After a while, Jen asked a group to consider the criteria they would use to choose a question, presumably because they had difficulty choosing. Jen reminded the class that they can also look through other groups' lists of questions, which had been shared on Edmodo, and told them they should now think more deeply about their decision-making process and decide what criteria they would use to pick one. Jen told one group to make better use of their iPads as extra screens. As the groups discussed, I noted that at least one group was wondering if they should use Mindmeister since Jen had told them to sign up for an account. Most groups worked on a shared Google Doc, with one small group using Evernote.

Jen shared the question chosen by one of the groups (how do you separate wanted and unwanted information?) with the class and told them to avoid repeating questions. Since the class was apparently struggling with the concept of criteria, Jen asked the group to give them one criterion they had used for choosing that question. After struggling a little, the group said 'interesting'. Jen acknowledged that this was a good criterion, but she would ask them what they meant by the word. Jen asked them to start a new document on criteria and share the link on Edmodo. Students continued discussing criteria while Jen monitored and gave feedback. It was difficult for students to focus on criteria and not jump straight into choosing a question.

The bell went, and Jen rounded up the lesson by emphasising the importance of have criteria when making everyday decisions. Simply following instincts would waste time. Jen asked the groups to share, starting with the group who had given 'interesting', which she asked to explain the word. After another group shared, Jen suggested that interesting could mean that it arouses curiosity. Another criterion raised was 'going deeper', or 'depth'. Another group shared that they thought the audience should be able to relate to the question, which Jen explained was the criterion of 'relevance'. Jen instructed the class think of another criterion, decide on their driving question and share them all on Edmodo. They would have to present next week.

In the next lesson (20 August 2014), Jen reprimanded the class for not posting the Google Docs they were supposed to. She reminded them that they should post the links first and finish the document later. They should not make the same mistakes they made in their first project (i.e. the integrated project). She expected to see evidence of learning, not perfection, but some groups had not shown signs of change. By not making an effort, they were being selfish and unfair to their group members. This was not a project that could be done in groups of 1-3 students. She suggested that the students rotate their roles.

She started the lesson proper by telling the students that they had 10-15 minutes to get ready for their presentations, which was supposed to have been completed earlier. Their presentations should have a clear direction and be interesting, not stating what everyone already knew. It should have more depth than the previous presentation they had done. As they worked, Jen monitored them. She told one group that she had annotated (highlighted) something on Storify using Diigo and ask them to check it out. With another group, she spoke with them about the problems they had working as a group. The group after that ran their driving question about terms by her.

At one point, Jen stopped in her consultation with a group to discipline a student who had shouted at his groupmates and interrupted her. She then moved on to discipline another student in a different group for arguing. She asserted her authority strongly in both cases. After this, Jen continued with her group consultations, suggesting to the group who worked on terms that they use analogies. The next group tried to explain their question about creativity to her but she told them they had to have a source to back their claim up. She then spoke to another group about their use of the drinking from the fire hydrant analogy, and using Haiku Deck. She also reminded the class to take notes. She continued to speak with the groups for some time, giving advice on their work and also group dynamics. As usual, the students seemed to feel comfortable with eliciting feedback from her. Jen asked them to put their main question on a slide at the beginning of their deck. They had to explain it briefly. They ultimately had more than 15 minutes to get their presentations ready as Jen advised all the groups.

She gave the groups about half an hour in total in which to finalise their presentations. Groups had to post the link to their Haiku Deck on Edmodo so that Jen and their classmates could give feedback during and after the presentation. A pupil kept time during presentations, with a buzzer that signalled the end of every 20 seconds. There was some debate as to which order they should present in but

eventually they arrived at one. Four groups (groups 1-4) presented in this lesson, and the presentations all went fairly smoothly. She told the students that she did not expect perfection -- this was simply an opportunity for them to gather feedback. She did expect logic and knowledge to be evident. This was not graded but a formative assessment. Students had to give feedback and suggestions to each other and be specific and constructive.

The first group presenting was from R2, 3 out of the 6 students in that larger group (figure 33). One of them told the timekeeper that they had about 6 seconds' worth of script for each slide and this was largely true. Jen called them out on this a couple of times during the presentation. She also posted comments on Edmodo. At the end of the presentation she reminded them that they had to speak for 20 seconds at least per slide. They were unable to do this, she said, because their explanations were insufficient and they had not rehearsed. While the other students posted feedback, Jen commented further on their presentation at their table (e.g., they failed to reinforce their key point throughout; they should not change the speaker so frequently). She also commented on the quality of the feedback given (figure 34), which was not sufficiently specific and constructive. Students should keep notes as they watched. One well-made point would be better than many weak ones.



Figure 33 A slide from the Haiku Deck by the first group presenting

capture curiosity?

 Ms. [redacted] said Aug 20, 2014
What's the map in relation to curation?

 [redacted] said Aug 20, 2014
too fast, too much time wasted

 [redacted] said Aug 20, 2014
Problems:
-Asking too many questions in one slide.
-Too fast (not within twenty seconds.)
-Pause at wrong time (especially [redacted]) Example, Tower, he's dragging the sentence. Maybe he could try to rehearse for the script?
-No feelings, example, when trying to say the feelings of Curiosity, they don't show it.
-Monotone
-Try to have more feelings while talking about this topic?

 [redacted] said Aug 20, 2014
-Didn't use time given per slide-Time given was 20 seconds, they should has used it wisely.
-No emotion- Emotions should be shown, as theres meaning to all those words.

 [redacted] said Aug 20, 2014

Figure 34 Some of the feedback posted on Edmodo for the first group presenting

Before the second group started, Jen pointed out the weakness of their title. What did 'it' refer to? Previously a student from another group had already asked them. The title needs to be rephrased. This group manage to say more for each slide. After they presented, Jen pointed out that it was by watching others present that students realised their own mistakes. A student replied that they had no time to make further changes but Jen retorted that they could still change the script. Jen also prompted another group to give some meaningful feedback to Elson's group. She told the class

that the more questions they had about the presentation, the more problematic it was.

The third group consisted of the other half of R2. As they got ready the group at the next table asked for permission to comment on their Google Doc that was posted on Edmodo. As usual, Jen had to remind them to say more. She also told them that even when it was time to advance the slide, they can and should finish their point with a different slide. While not very articulate, the group seemed to be trying to say more and used a more consistent analogy. It was quite obvious that they had not rehearsed, however. Their presentation also did not very successfully answer their driving question with regard to power. Back at their table after the presentation, the group discussed what had gone wrong. She reminded the class again that they cannot leave points unfinished, even if the slide had advanced.

The last group is a large one of 8. They moved the keyboard and mouse of the teacher's Mac so that they could present and advance the slides at the same time. They seemed better prepared than the previous groups but still tended to have too little to say for each slide. One of the girls compensated for the others, especially the boys, when they had too little to say, by filling in. They did not have much of a story to tell. Halfway through, Jen stopped them for going too fast and asked them to start again from a few slides back.

Jen rounded up the day's class by commenting of the presentations so far and giving more advice based on what she'd seen. She commented that they were too dependent on their script and did not know how to improvise. Helping each other fill in their gaps is part of teamwork. Students should take more responsibility and ownership of their work. As this was ungraded, it was a good opportunity to learn from mistakes. Most importantly, students tended to forget to refer back to their main question, to make the links for the audience. They had to rehearse so that they could time themselves. They should also check the pronunciation of words.

On the subsequent lesson (27 August 2014), two groups presented. The usual timekeeper offered his services. Jen reminded the students to give feedback as the groups presented, and said she hoped to see their feedback improve in quality as time went on. She pointed out that good feedback is sometimes a good question. After the first group finished presenting, she gave the class time to post feedback, but did not comment out loud to the whole class as she normally did. She asked the next group to get ready and spoke more privately to one of the girls who had just presented on her speaking performance both in this presentation but also in her Project Work presentation and recording (a previous assignment). She told her that she had shown no improvement at all. She then took her out of the class to speak further and told the rest of the class to watch the next presentation and give feedback as they normally did.

The class got noticeably more chaotic as the next group prepared to start. Without Jen to keep them in check the students try to manage themselves but with mixed success. With too many students trying to take charge, the class got noisier and more chaotic. As the group presented, some students argued among themselves thus causing some disruption. Generally, however, the students seemed to understand Jen's expectations and the timekeeper in particular tried to take charge with some success.

Outside the class, Jen lectured the student not only on her poor performance but her lack of effort in preparing and understanding the content of what she was going to say. The student had got somebody else to do her recording and Jen asked why she had done that despite having been given so much time to get it done. The student insisted that she had written the script but Jen told her that her script had already been assessed and she was now being assessed on her spoken English. Jen questioned how the student was going to get by in life being unable to speak up. Very angry now, Jen called the student on her lack of responsibility and guilt in dragging her groupmates down with her poor performance. Jen expressed her

disappointment in the student and told her that since she had obviously decided to fail, Jen would ask her group if they really want her in the group. She could do the work on her own. Jen reminded her that she did not expect perfection from students, but effort and improvement over time. The student had to stop mumbling to herself if she didn't want to fail her oral exam. She had shown no effort to learn from others and apply them to her own performance. Jen had been patient with her since the year before but she had made little effort and shown little progress. Jen told her that she (Jen) cared that this would be a hindrance for her for the rest of her life, to have no courage and no confidence. Jen told her to think about what she'd just told her and reminded her to do her recording that day.

Jen returned to the class and asked the last group to prepare to present. She apologised for not having heard the group before and asked the class how that had gone. Some students complained that others were noisy and disruptive during that presentation. They also complained that the group had not posted their Haiku Deck on Edmodo. The class would not say who were noisy so Jen told them that she could easily check since I was a witness and there were audio recorders recording. Jen could make the guilty students give a special presentation to a bigger audience. Jen found out that the group who was now preparing to speak started it by discussing their own presentation while the other group was presenting. Jen penalised them by not letting them present that day. She reminded them that it is a privilege to have others listen to one speak. She reminded one of the group that she had scolded him just the week before for interrupting others. She would speak with the group later. She now turned to the group (R3) who had told the noisy group to shut up. She told them that there were better ways to get people to keep quiet.

Jen moved on to the topic of feedback. Students should refine their focus questions and narrowed it down to one based on the feedback they had received. They needed to come up with criteria to filter out what they didn't want and selected what they wanted, and plan what they were going to do next. All this research and questions

had to be presented (not 20x20). The presentation had to include text, images, diagrams representing their personal perspective on what they had learnt. What did they find intriguing? What left them with more questions and why? What had made them relook at what they were doing and thinking about learning and knowledge? These were some questions to get them started. They also had to read up on how to search online (Jen had already posted on this on Edmodo some time ago). They had to explore the resources and post some responses individually before she met them again the following week. Jen then ended the lesson, and took the disruptive group out of the room to lecture them further on their behaviour.

Jen's formative assessment in Stage 2

In the context of Wiliam and Thompson's (2008) five strategies for formative assessment, Jen's instruction and guidance in her Stage 2: Haiku Deck presentation project can be analysed as follows.

1. Clarifying and sharing learning intentions and criteria for success

Jen clearly communicated the learning objectives and the success criteria to her students. The students were informed that their presentations were to be executed in the 20x20 (Pecha Kucha) style using Haiku Deck, a platform intended to promote audience awareness and storytelling. Moreover, she emphasised the relevance of visual storytelling and the importance of making careful choices in terms of visuals. She also made it clear that this was a formative task, preparing students for a graded curation presentation later in the term.

2. Engineering effective classroom discussions, questions, and learning tasks

Jen structured the classroom environment to encourage productive discussions, questions, and learning activities. She facilitated an open discussion on the concept of curation, encouraging students to identify an essential question for their presentations. Jen also prompted students to consider the criteria they would use to

choose a question, thus stimulating deeper thinking about their decision-making process.

3. Providing feedback that moves learners forward

There were numerous instances of Jen providing constructive feedback to groups. For example, she suggested using iPads as extra screens, discussed the use of analogies, and checked the validity of their sources. She also displayed her own Pecha Kucha, modelling what a good presentation might look like. Jen's feedback was designed to further their understanding and improve their final output.

4. Activating students as instructional resources for one another

Jen asked groups to share their work on Edmodo, thereby encouraging peer learning. Students were also expected to give feedback and suggestions to each other, thus serving as instructional resources for their peers. For example, they were expected to comment on each other's work during presentations, fostering a sense of collaboration and mutual learning.

5. Activating students as the owners of their own learning

Throughout the project, Jen emphasised the need for students to take ownership of their learning. She held them accountable for their preparation and presentation, reminding them of the importance of readiness. She also gave them the responsibility of managing their group dynamics, asking them to consider whether they wanted to split into smaller groups. Furthermore, she encouraged them to post their work on Edmodo for peer feedback, supporting student autonomy in their learning process.

In conclusion, Jen's instructional strategy in the Haiku Deck presentation project was on the whole closely aligned with the principles of formative assessment as outlined by Wiliam and Thompson (2008). Through clear communication of expectations, the facilitation of effective discussions, timely feedback, activation of students as

resources, and emphasis on student ownership, she created a learning environment that promoted continual growth and improvement.

Stage 3: Storify

Assessment opportunity (iv) took place over 2 lessons. On 3 September 2014, Jen introduced the curation task (posted on Edmodo the night before, see figure 35). She gave them some time to read it and think of questions to ask her. A student asked what 'debatable' meant. In relation to this, Jen asked them if they should exclude opinions they disagreed with and why? How did they know an article was trustworthy? If it was written by a non-expert on social media, was it necessarily less trustworthy? Students needed to explain their criteria for choosing their articles. Jen then made them plan their detailed schedule for the week ahead and told them not to come to meetings with nothing prepared. They should learn from prior project work mistakes in managing groupwork. Most groups made a table on a shared Google Doc to plan their work while others used Google Calendar. Jen approved of Google Calendar since it could send reminders via text messages, etc. (which surprised some students).



Ms. [redacted] to [redacted] Online Curation Unit (Sec 2G English)

GROUP CURATION TOPIC PROJECT: TASK to COMPLETE IN CLASS

1) A topic can be expressed as a question. This will make it easier for you to EVALUATE why this question is worth asking, exploring through searching various sources (videos, social networks, websites etc), reading, and makes for a question that is worth the time / effort spent curating information about.

2) TRY to zoom in on DEBATABLE topics and NOT FACTUAL TOPICS. Consider ISSUES that are 'HOT' in the news, or social media and also OF PERSONAL INTEREST to your group members. EG Would TWITTER TRENDING TOPICS be a good place to begin? WHY? Or what are people discussing in local context or international context that your members feel is INTERESTING to a target audience (define the audience? Is it for teens your age? Gender? Or a particular group of people?)

3) How would the team make the decision about the focus of their topic and the essential question / driving question. After that , what are some RELATED sub-questions that you can ask? How can these questions HELP you SEEK sources of information?

4) Do you need to be specific about HOW MANY RELEVANT SOURCES each member need to FIND and COLLECT? Do you need to come up with some CRITERIA for CHOOSING which sources? (think of HOW TO EVALUATE these sources?) Do you THINK you should include VOICES / POVs that are opposing, or even the ones that are BIASED? Why/ why not?

5) Spend time checking out the STORIFY website for tutorials and guides and examples of how storify works. [Show Less](#)

- Reply - Share

Sep 3, 2014

Figure 35 3 September curation task for Jen's class

Jen then directed their attention to the Google search task (posted on Edmodo previously, refer to figure 36), which should be their first task, and took them through it briefly. She reminded them that the first step of curation was to seek. Without knowing how to search, we would drown in a sea of information. Each student had to write 150 words of reflection on this, to be combined into a document per group. She then talked about trending topics, not just on Twitter but on Google too. She also reminded them that 'interesting' did not equal 'valuable'. She projected the Google Inside search page to show them Google's guide to search, search for education, and their power searching course. This Jen said gave group members different tasks to do. Each student had to take notes on what they had learnt, using screen captures if necessary. Their reflective document could have media, such as graphics, or a screencast tutorial, to teach the reader how to search. This would be graded.



Ms [redacted] to [redacted] Online Curation Unit (Sec 2G English)

Task: Smarter Search Skills

Instructions:

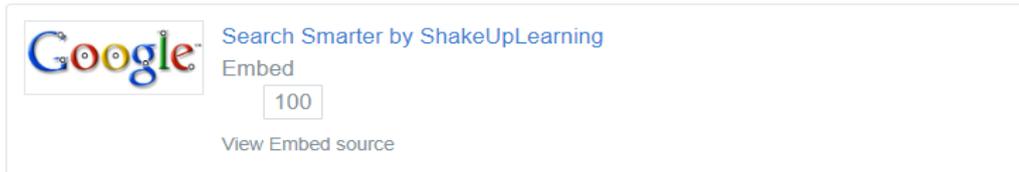
1. Generate questions about SEARCH SKILLS eg What makes me a better at conducting research on Google Search? After you have come up with a list of questions, SELECT what you think are ESSENTIAL QUESTIONS (what makes a question essential?) and further UNPACK related questions. Capture the questions you have selected in a mindmap.

2. Assign questions to each pair in your group. Use the questions to help you explore each of the links embedded in the image (attached from THINGLInK). Your focus shld be guided by the essential questions you have and you are to find 'answers' to these questions.

3. Use Skitch / Evernote clipper to clip / annotae so you can use these later in your project task. You MUST share these NOTES with your group. Group members SHOULD probe with further questions so you can go back and restudy / read / view the relevant LINKS again to improve on your notes/ thoughts and reflections.

4. Each student in the group MUST submit a reflection entry of at least 150 words on a google doc shared with the group. Your reflection should focus on the answers you got based on the essential questions you were assigned and ALSO on what you have learned:

- compare to the way you did search / research before online
- draw on difficulties you encountered before eg porject work
- explain / reflect on how this task on smarter search skills have helped you develop skills to be better researcher
- reflect on why search skills are impnt to curation + impnt to learning [Show Less](#)



· Reply · Share

Aug 12, 2014

Figure 36 Smarter search skills task for Jen’s class

Next Jen told them that each group should start a Storify account to share among themselves (and should therefore not to sign in with Facebook, etc). A student in each group had to find out about the technical aspect of Storify and teach the rest. They had to decide on a driving question for curation which then had to be approved by Jen. Students then collected iPads to continue working. Jen reminded them that they had to explain what made their topic worth curating. Groups started by looking for trending topics (using Google, Twitter, Yahoo). Partway through, Jen suggested to

the class that they start with brainstorming -- everyone in the group had to contribute one topic. Jen went around the groups to monitor and advise students.

Jen reminded them to use Diigo to annotate articles. Each group should start a shared Diigo account. About 10 min before class ended, Jen told them that Twitter was a good platform to search as it is a place of conversation. She told them to use hashtags to search on Twitter -- they had to be able to skim quickly which they could if they knew their criteria. A student in each group could be assigned per platform (Google, Twitter, etc). This was why knowing how to search was important. The students continued to discuss and one group told Jen they wanted to choose the topic of same-sex marriage. Jen told them that while she had no personal objections to such a topic, it was too taboo (in Singapore) for her to recommend that they research about it for school. (Jen later told me that this would have been a risky topic, by which I understood she meant that conservative parents might complain.)

For the lesson on 15 September 2014, students were late because they had gone up to their new classroom (changed due to on-going 'N' Level exams) to put down their bags, but then had been unable to unlock the room. Jen gave them a dressing down because of this and also because they had failed to finish the curation work over the one-week school holiday that had just ended. Jen told them this would be the last session she was giving them in class to work together. Thereafter, the 'lazy' ones would not be allowed to join the class and would have to do exercises in their own, so that they didn't hold back the rest of the class.

Students had to finalise their topic/driving question and divide their workload. They should write as they collect articles and not wait till the end. They were reminded that the search assignment would also be graded. Jen told them that they had to make sure they each logged in to Google Docs to write, comment and chat so that she could see evidence of work done by each person. In shared accounts like Storify they had to leave their names so that Jen could identify the individual contributions.

One group told Jen they had finally decided to work on the topic of 'iWatch' (Apple Watch), which Jen thought was a good choice, being current at that point and much debated. She reprimanded another group for leaving the search assignment to be done by one of their members, telling them that it was obvious from the high quality of the work who had done it. She advised the student to leave the group since he could obviously handle the work all by himself. Some students started to blame each other for not getting work done. Jen then took a boy (the class leader) out of the room and spent some time lecturing him outside for not getting the class to the lab on time and generally being a poor leader, while the rest of the class worked on their curation project. Students were already supposed to be familiar with Storify but a couple of seemed to be just getting started. Most groups were still working on developing their topic on GDoc. One or two were getting started with Diigo.

Jen came back in for a while to look at group R3's work and comment. She reminded them that their topic and question had to be debatable. She continued to go around the groups and give her feedback and advice. She reminded one group to take their notes online so that everyone could be aware of what was going on, and that everyone should be working simultaneously. In response to a student's question, she said that research is not linear but exploratory and iterative, and thus doing it online is much easier. She told another group that if they already had the answer to a question, then there wouldn't be much point researching it. They should not make assumptions, but gather evidence online. She reminded them that instead of Google, there are other places (e.g., forums) where they could find more specialised information. Jen continued to question and advise other groups. Another group was also advised to not immediately search on Google, but check social media, e.g. Twitter, to get opinions. She reminded some students to make use of Evernote screen capture to collect evidence.

The bell went. Jen stopped the class to tell them not to think in terms of binaries: good/bad, pros/cons, advantages/disadvantages. It all depended on context, just like

PAC (purpose, audience, context) in situational writing. Students had to go deeper and examine different perspectives to see how a topic was debatable. She ended the class late as she missed the bell and the students had not alerted her.

After this last curation lesson that I observed, I was aware that Jen continued to share resources to support her students in completing the project. For example, she shared a couple of examples of good Storifies, including one that she did herself, with comments to draw attention to their strengths (see figure 37 for an example).

Ms. [redacted] to Online Curation Unit (Sec 2G English)

An example of how to WRITE using Storify - how to porganize your own writing + sources so that it actually discusses an issue / driving question, and how to REFLECT thoughtfully on the sources and include this in your final storify.

CLICK THIS LINK (the one below doesn't seem to load): <https://storify.com/ENC1101/athena-critical-i...>

Study the different strategies used by this writer:

- 1) The Context of the Question / Issue / Topic described clearly in the introduction. (see the way she uses a collection of poem and links it to herself)
- 2) The way different sources are used and the writing flows from the sources (see the discussion of the source - the poems - in the second para)
- 3) Use of VISUAL source - an image - and how this IMAGE is selected carefully bec it ILLUSTRATES visually a particular concept / idea that is discussed in the para after the image. Even a Youtube video is used too.
- 4) Surprised that a meme if selected to conclude ? Why not a meme - if it actually adds a RICHER perspective to the issue? [Show Less](#)

 Athena: Critical Inspiration Project (with images) · ENC1101
Embed
52
[View Embed source](#)

· Reply · Share Oct 6, 2014

Figure 37 A Storify example for Jen’s class as model, shared on Edmodo

I was not able to retrieve any Storify by Jen’s students, even though all but one group submitted theirs (the links did not work for me). Jen had anticipated that not all would be able to complete the project, and had already planned to focus more on assessing the process (rather than the project). To this end, about a month after the last observed lesson, she shared a Google Doc template with her students on

Edmodo, to help them organise the ‘deliverables’ (figure 38). Jen was able to provide feedback on the Google Doc (example in figure 39), as well as on Edmodo (example in figure 40).

1. Developing The Driving Question

STAGES	LINKS	Summary of the Discussion in Your Group: How You Make Decisions
Brainstorming Topic		
Developing Driving Question		
Criteria for A Good Driving Question / Topic		
Final Driving Question		

2. ANNOTATED LINKS: DIIGO

TITLE of Source	URL of Source	Why This Source Was COLLECTED?

3. FINAL STORIFY

FILTERING SOURCES: How Decision was Made? (Criteria for ChOICE)	LINK
Evaluation of Sources: Shows evidence of how you used criteria above to discuss and made your final selection	
FINAL STORIFY	

Figure 38 Jen’s template for students’ Storify submission

Dilgo group name : Curation Project iPhone 6

TITLE of Source	URL of Source	Why This Source Was COLLECTED?
iPhone 6's Battery	http://www.forbes.com/sites/markrogowsky/2014/09/09/in-picking-form-over-function-apple-gave-the-iphone-6-a-lousy-battery/	This article shows the problem regarding the battery usage that the previous iPhone users faced but they continued to face the same problem. It speaks of the disadvantage that Apple always have with the iPhone products
iPhone 6 Design Shame (Protruding Camera)	http://www.forbes.com/sites/gordonkelly/2014/09/16/iphone-6-camera-bulge	This article is based on its design of the protruding camera of which talks about the ugly camera that was changed on the iPhone 6 and were not aware of the customer's needs thus having a long earned reputation for not giving what the customer wants
The good and bad of the new iPhone 6	http://www.rollingstone.com/culture/news/apples-iphone-6-rivulet-the-good-the-bad-and-the-ugly-20140910	It shows the advantages and disadvantages of iPhone 6 and the reason for the users buying/not buying the phone. iPhone 6 is way better than



Jen

14 Oct 2014

✓

i think it does talk about other features too. However, this is based on marketing shots, NOT the actual product. Do you think this evaluation is fair / accurate?

Figure 39 Part of a Google Doc submission with Jen's comment

 said Oct 9, 2014
 Link for storify: <https://storify.com/.../iphone-6>
 The attachment doesn't work

 Ms.  said Oct 11, 2014
 Where have you shown me evidence of your choices and criteria for CHOOSING and revising DRIVING QUESTION> I said to re-organize...and I still see it NOT organized. If I cannot find evidence as LISTED in the rubrics I posted, I will have to award a LOW score based on rubrics.

 Ms.  said Oct 14, 2014
 still incomplete - note my comments in gdoc

 Ms.  said Oct 15, 2014

- 1) A reasonably good organisation of you evidence / process of research
- 2) You were able to document the THINKING process behind the brainstorming of topc to the final driving selection and I liked you picked up on the idea that though iphones are sold at a higher price , they are still extremely popular and people actually queue up to get it first. I liked that you collected links from social media to document evidence of this frenzy.
- 3) Good attempt to summarise the arguments made by each source and being able to identify the POV of each source. You could have included WHO the writer was or whose perpective they represented.
- 4) I really liked that you focused very clearly on the criteria used to filter the final sources to be used in your storify.
- 5) STORIFY - I really liked the way you contextualize and introduce the issue through the VIDEO of Steve Jobs introducing the 1st iphone and asking the question abt whether the new iphone has veered away from JOB's original vision. However, you did NOT focus enough on the vision of Jobs and whether the so called 'problems' identified by others is evidence that the latest iphone isn't 'revolutionary in design'. You focused too much on functioanl issues like bulging cameras etc BUT did not really draw a final conclusion yourself..and neither did you actually answer your own driving question. [less...](#)

Type your note here...

[Add Comment](#)

Figure 40 Jen's on-going feedback on the same group's submission (I was not able to retrieve the Storify linked here)

Jen's formative assessment in Stage 3

Jen's Stage 3 can be examined through the lens of Wiliam and Thompson's (2008) five strategies for formative assessment, as follows.

1. Clarifying and sharing learning intentions and criteria for success

Jen clearly communicated her expectations and the task requirements to her students. She introduced the curation task and the Google search task, specifying what was expected from the pupils. For instance, each student was required to write a 150-word reflection, and the task was to be graded. The same clarity was applied when she guided students on the use of Storify and the creation of a driving question for curation. The criteria for success were mostly explicit; students knew that their reflective document, which could include various forms of media, would be graded, and that Jen needed to approve their driving question.

2. Engineering effective classroom discussions, questions, and learning tasks

Jen engaged her students in meaningful discussions and encouraged them to question and challenge information. For example, she asked them to consider whether they should exclude debatable opinions and how to determine the trustworthiness of an article. She encouraged the use of different platforms for research, such as Google, Twitter, and forums, and advised on how to use these tools effectively. These effective discussions and questions promoted critical thinking and information literacy amongst the students.

3. Providing feedback that moves learners forward

Jen provided feedback that was specific, timely, and constructive. She gave direct feedback to groups and individuals on their work, such as the choice of topic and the quality of their search assignment. She also offered advice on how to improve their work, such as reminding them to take their notes online and highlighting the importance of thorough research. This feedback was intended to guide the students in their learning journey and improve the quality of their work.

4. Activating students as instructional resources for one another

Jen fostered a collaborative learning environment where students were resources for one another. She encouraged group work, where students shared their findings and reflections. She also assigned a student in each group to learn about and teach the others the technical aspects of Storify. This peer-to-peer teaching and learning model not only reinforced the students' understanding but also fostered a sense of responsibility and teamwork.

5. Activating students as the owners of their own learning

Jen tried to empower her students to take ownership of their learning. She emphasised planning and preparation for meetings, advised students to learn from past mistakes, and stressed the importance of individual contributions in group tasks. She also emphasised the need for students to justify their choices and explain their criteria, thus promoting autonomous, reflective learning. This was further seen when she advised a capable student to leave his group if he could handle the work alone, indicating her support for student autonomy.

In conclusion, Jen's teaching approach in this stage effectively utilised the five strategies of formative assessment as outlined by Wiliam and Thompson (2008). She created a learning environment that was clear in its expectations, encouraged discussion and critical thinking, provided constructive feedback, promoted collaborative learning, and empowered students to take ownership of their learning. This environment likely facilitated the students' learning and engagement in the tasks at hand.

Summary

This section examined Jen's classroom assessment practices across the three stages of the digital curation project through the lens of Wiliam and Thompson's (2008) five formative assessment strategies. The analysis uncovered patterns in Jen's practices

that contributed to the project's outcomes and the development of students' digital literacies. Despite the ambitious and complex nature of the curation task, Jen's formative assessment practices effectively supported student learning throughout the project. However, it is important to note that not all groups were able to complete and submit a Storify by the end of the project, which Jen had anticipated and thus placed a greater emphasis on assessing the learning process rather than the final product.

Throughout the three stages, Jen invested significant effort in establishing a shared understanding of curation concepts, designing engaging tasks, providing support and guidance, and fostering student responsibility and autonomy. The analysis highlighted Jen's strengths in facilitating meaningful discussions, offering constructive feedback, and promoting student ownership of their learning. The analysis drew attention to the link between Jen's formative assessment practices and student learning outcomes. For instance, Jen's effective questioning and feedback during Stage 1 assisted students in developing a deeper understanding of curation concepts, whilst her focus on justifying choices and reflecting on learning in Stage 3 nurtured students' metacognition.

The findings address RQ1b, which focuses on how teachers' formative assessment practices impact the assessment of digital literacies. The analysis demonstrated that when formative assessment strategies, such as clear learning goals, scaffolding, and constructive feedback, were effectively implemented, students were better prepared to develop the necessary digital literacies to engage with the curation project. This highlights the crucial role of formative assessment practices in supporting the development of digital literacies. When considered within the broader research context, the analysis of Jen's practices showcases the potential of formative assessment in assessing digital literacies whilst also recognising the challenges teachers may encounter when implementing these strategies in complex, technology-rich contexts.

In the following section, I shift my focus beyond the observation of Jen's formative assessment practices and the resulting student outcomes to explore the wider set of internal and external elements that influenced Jen's classroom assessment of digital literacies.

5.3 Elements that affected Jen's classroom assessment of digital literacies

In this section, I address Research Question 2, in relation to Jen's class. In other words:

RQ2b: What specific assessment literacies are required for teachers to effectively assess digital literacies in the classroom?

RQ3b: How do teachers' own digital literacies affect their assessment of digital literacies in learners?

RQ4b: How do teacher-student relationships, expectations, and mindsets affect the assessment of digital literacies?

This analysis uses the framework described in [section 3.5](#) (figure 11).

Jen's assessment literacies – 'assessments create possibilities'

Throughout the classes, Jen demonstrated that she understood the importance of feedback. In assessment opportunity (i), she monitored discussions and answered questions. In assessment opportunity (ii), she also took care to monitor and guide the students, giving technical advice, pointing out strengths and weaknesses, and focusing the attention of the students on the concept of filtering. In assessment opportunity (iii), Jen not only gave feedback about the task they were on and how to proceed, but she also gave tips on how to better make use of the hardware they had at hand. She made use of a question from one of the groups as a learning point for the whole class.

Through observing the students' progress, she was able to identify the problem that students were not able to develop criteria for picking a good driving question. This was another example of how Jen understood the feedback loop and was able to employ dialogic feedback during formative assessment in class. In this assessment opportunity, she also reminded students of past mistakes as a kind of feeding forward. Students clearly felt comfortable with running their ideas by her, demonstrating her success in inculcating dialogic feedback in her class despite the typical fear that students have of getting things wrong. Many were clearly able to, thanks to her insistence that in order to learn one needed to make mistakes and explore.

Jen cultivated feedback literacy also by getting students to give feedback and suggestions to each other online during and after their Haiku Deck presentations in this assessment opportunity. These were expected to be specific and constructive. This guidance was important in order to build the students' feedback literacy. Jen herself not only provided feedback online for the students, but she also commented on the feedback given by other students. Again, this was in order to cultivate better feedback literacy among her students. The use of Edmodo for feedback, which was visible to everyone in the class, was also good feedback and assessment practice as it gave students more models to look at, whether good or bad. This allowed students to have a more concrete idea of what constituted quality in a Haiku Deck presentation. Jen also gave global feedback to the whole class at the end of the lesson.

Jen recognised the importance of feedback as also feeding forward (excerpt 5.12). In other words, students were learning to give better feedback now, so that they can improve on their feedback the next time they had to do it.

In terms of giving feedback [...] I never see one activity ending as ending. To me it's always what's next? Yeah, what's next? What's next? Even next year

[...] if they don't really know how to give feedback [...] then that means there's some things they're not noticing'

(Excerpt 5.12, Jen, Interview 2).

Jen was also able to go beyond simply criticising students' lack of effort. She was able to identify specific issues that students had. For instance, she told students that they had failed to develop ideas and instead tended to give simply fragments of ideas. Similarly, she pushed students to persevere and not give up easily (excerpt 5.11). This is in line with how she was able to be patient in allowing students sufficient wait time. She understood that learning takes time and patience. She also seemed to understand that the feedback process is a dialogic one, as she encouraged students to post questions that occurred to them as they worked rather than simply answers to her questions. This was such that she would be able to give feedback and complete feedback loops.

Finally, Jen recognised that her own competency as an assessor is always a work in progress. She recognised her own limitations but was willing to leave her comfort zone and challenge the status quo when she judged that she was ready (excerpt 5.13).

Once I started with, you know, backward design, I mean, I have been thinking a lot more about assessment because it really puts, you know, assessment, different kinds of assessment... And you know, some people say that's very unrealistic, the UbD [Understanding by Design], because, you know, our kind of assessment doesn't fit that. So, there was that stage. [...] Because that backward design, because it has so many different types of assessment and different forms of assessment, and it also allows for students to show and demonstrate their understanding in different ways.

(Excerpt 5.13, Jen, Interview 1)

In summary, Jen exhibited sophisticated assessment literacies via effective monitoring, dialogic feedback and cultivating student feedback skills. She recognised assessment as an ongoing process, not an endpoint. Jen tailored support to learner needs, embracing mistakes as learning opportunities.

Jen's digital literacies – '[it] requires a certain flexibility and open-mindedness'

In this section, I examine Jen's display of her own digital literacies. I will present Jen's reflections and comments to support my analysis, using the same analytical approach as in the previous chapter.

Jen utilised comic books and trading cards as a means of demonstrating curation, effectively making abstract concepts concrete, much like how mathematics teachers use manipulatives to illustrate mathematical principles. Having the physical comic books was also quite helpful when she was explaining her answers as to how she curated them. Despite the students potentially lacking personal experience or knowledge with comic books and trading cards, they were still able to relate to the materials and found them more engaging. I sensed that her students appreciated that their teacher made an effort to connect with them on a personal level.

Jen used this opportunity to distinguish between collection and curation (excerpt 5.14). One could collect things, and many people do, but not everyone would necessarily curate their collections. The students did not find the activity as easy as Jen had expected, which I attributed to their potentially not being great consumers of Western comic books. Despite this, Jen did not hurry them and actually supported them in their discussions, giving them enough time to think about their answers. She also provided hints, and did not immediately expect all the students to understand the criteria she used. While she might have expected them as young adults to be more familiar with topics such as comic books, she nevertheless had the patience to support their exploration.

And I said that curation, uh, often, you know, you have to start with a collection, the two Cs, curation, collection, right? So they're very closely related, but a collection doesn't mean that it's curated, okay, you can have a collection, but it's not curated. Understand? So there is a difference between the two words, although they are very closely connected. So you might wanna write down curation, collection, alright? So that as you do your task later on, you know, these are, these are key concepts, alright? These are very important concepts you have to think about later on. So you can have, I say this again if you want to, you can actually write what I say now because it sounds like a paradox, you can have a collection, but it doesn't mean that you have curated it.

(Excerpt 5.14, Jen, lesson observation 3)

Jen proceeded to use this exercise to move from the concrete back to the abstract. For instance, she emphasised the importance of themes when it comes to curated collections. She also used questioning to make the connection between the comic books and trading cards and something more abstract, such as information and knowledge. She pointed out the similarities between curating something concrete, such as comic books, and curating something abstract, such as information, such as considering its worth in terms of time spent. She also used questioning to try to get the students to think about higher-level concepts, such as what constitutes information and knowledge.

This task was arguably successful in getting students to think about curation. The students appeared to enjoy the task and took the initiative to pose questions to Jen. Some were interested enough to search for clues on Google, even though Jen discouraged it. The fact that a student asked to read the comics after the activity had ended was also a positive sign. Jen's ability to introduce the concept of curation by moving from the abstract to the concrete and back to the abstract showed her deep understanding of the concept. She anticipated that a solely abstract discussion of

curation might be too challenging for students to grasp and did not assume they would find digital literacies effortless simply by virtue of their youth.

Similarly, in focusing on the concept of filtering, Jenn used a physical analogy, filtration from chemistry, to explain a central concept in information literacy and digital curation. The fact that students clipped filtration images showed that this was an analogy that captured their imagination (though Jen certainly did encourage them to do this as well). As with the exercise involving comic books and trading cards, using a physical analogy allowed Jenn to move from the abstract to the concrete and back again, making the concept more relatable to the students.

In assessment opportunity (ii), Jen encouraged her students to use a variety of digital tools but did not ban pen and paper. She introduced new tools that might have been more appropriate for the task at hand, and pointed out specific affordances that students might find useful, but did not dictate which specific tools to use and how to use them. She did not seem to fear that the multiplicity of digital tools introduced might be overwhelming or intimidating for her students, allowing them to be more creative and resourceful in their use of digital tools. For example, one group used a group Diigo account and shared the username and password since Diigo did not allow collaboration like Google Docs. This workaround allowed the group to use a tool that was potentially more powerful, since it allowed them to collate different forms of information in one digital binder.

When students encountered technical problems, such as an issue with their internet connection, Jenn was able to demonstrate how to troubleshoot and mitigate the issue, even if it could not be entirely solved. She also provided students with the opportunity to leverage the specific affordances of different apps, assigning them to read and annotate on the class Diigo account and summarise for the group. This specific task helped students understand why a particular tool might be better than others for specific purposes.

By not specifying one right way to proceed with the task, Jen reinforced the importance of exploration in curation. She also reminded students that digital curation is done with an audience in mind and is a way to communicate information and ideas to others, aligning with the principles of communication that students had already been taught, focusing on not just the purpose and context, but also the audience. Jen's emphasis on audience in curation is important because online curation is primarily for others to share in one's knowledge. Part of the digital literacy of curation is being able to capture the audience's attention. The attention economy is an important concept in social media (Ciampaglia et al., 2015). Therefore, to be literate in online curation requires one to be able to capture the audience's attention; audience awareness is therefore critical.

In this lesson, Jenn demonstrated and communicated her understanding that digital literacies are not about knowing how to use specific digital tools (excerpt 5.15). Rather, it is about understanding that there is no one right digital solution for every problem. We need to be flexible in our selection of digital tools, and this should be dictated by our goals, rather than the tool itself.

I don't think the tools are ever a problem. I've never seen tools as a problem, because you have so many alternatives; you can do it in different ways. There's always a solution; it's whether you wanna find a solution.

(Excerpt 5.15, Jen, Interview 3)

Jen's choice of digital tool for assessment opportunity (iii) was selected with the goal of inculcating visual literacy in the students, which we know to be important to her (see [section 5.1](#)). Haiku Deck, besides emphasising visuals over text, also includes automatic attribution of images. This eliminates the need for students to do attribution themselves (which is arguably a disadvantage), but still highlights the importance of attribution when using sources. Both visual literacy and attribution are important aspects of digital literacies.

In selecting examples for her students, Jen not only provided her own but also an imperfect one created by one of the groups for a previous project. This gave her the opportunity to critique the example and point out potential flaws, as well as showcase a piece of student work to the rest of the class. By doing this, she was able to demonstrate in a concrete way how visual storytelling could be successful (or not).

Throughout the curation project, Jen was quite consistent in using digital tools. Not only did she use some apps consistently, such as Google Docs, but she also introduced additional apps that might be more suited to the task at hand at various points of the project. This was an example of just-in-time learning. However, she did not insist that students use a specific app for a specific task. She allowed students the freedom of using the tool that they felt fit their needs best. In doing so, she helped students learn to match the affordances of a digital tool to the objectives that they had in using it (excerpt 5.16). This is an important part of digital literacies.

And sometimes really, it really is learning together [...] when I'm not sure, I will usually give the students a choice [...] I'll let them explore with me. And then I will look at how they choose like certain tools or do they do it in a certain way? [...] And so you feel that by observing their choices, you also learn something [...] Sometimes I will ask them, Why do you do that?

(Excerpt 5.16, Jen, Interview 1)

She believed that in getting students to explore and learn on their own with regard to the technical part of things, they would change their digital practices. She gave the example of the use of Chrome extensions: previously students had not used them, but after working with her they now did it quite naturally. Whereas previously students would take notes on paper, now they used online collaborative apps like Google Docs and Evernote. Essentially, she did not see digital literacies to be about tools, but about mindsets and dispositions (excerpt 5.17).

I think [digital literacies come] with certain, um, mindsets. Mindsets that have evolved because of the way technology is so seamless and, you know, and it's available everywhere and, you know, you just can't really ignore it. So, you need, and because of the speed of information, the amount of information intensity sometimes, right [...], I feel that some kind of mindset and dispositions that you cultivate, right, so that you can survive[...] And sometimes in certain social worlds online, it's to your advantage do that. [...] [T]o me it requires a certain flexibility and open mindedness. Um, a certain level of critical thinking and reflection.

(Excerpt 5.17, Jen, Interview 1)

When asked about her own digital practices, Jen admitted that while she curated, she did not curate much in the sense of not only coming up with a collection of links or online resources, but to also construct a narrative out of it and link it to her own personal experience (as in the curation project). However, she did feel that her own experience with using apps gave her the ability to be flexible, so that if the affordances of one tool did not meet her needs she could switch to another tool. Her own digital practices also allowed her to judge what students would be able to do and what they may struggle with. For example, students might find tweeting as they read to be too challenging (excerpt 5.18).

I'm also thinking of [...] when A doesn't work, you know, you switch to B. [...] I mean that also takes this particular know-how, right? I mean, you have to be aware that A and B are similar in what way and different in what way, in order to be able to switch. [...] that comes from really, me using it and I use it constantly. I don't just use it once in a while, which is why I actually considered Twitter and thinking about, you know, could I get the students to tweet as they read [...] So that was one way of keeping track of, you know, what are they reading and what's the response, what are they doing? If I

could do that, that would be great. But I don't think with that time I have... I decided to throw it away.

(Excerpt 5.18, Jen, Interview 2)

One thing that she did have to learn was to consider the collaborative affordances of apps as she herself mostly used them as an individual. However, as she trusted her students to learn using new technology on their own, this was probably not a major issue.

In conclusion, Jen demonstrated strong personal digital literacies through her ability to flexibly leverage technology to achieve pedagogical goals. She scaffolded abstract concepts using concrete examples, emphasised mindsets over tools, and gave students agency in selecting and utilising digital platforms. Her own experiences enabled empathy and realistic expectations of learners.

Jen's relationship with learners – 'people are multi-dimensional'

On the whole, Jen appeared to have a more growth mindset-oriented belief in her students and did not hesitate to stretch her students while providing scaffolding to help them achieve their goals. When the students struggled, she did not give up but tried her best to help them along, which seemed to indicate a belief that her students could achieve more than they thought they could (e.g., excerpt 5.11). Just as she was willing to give students additional wait time to accomplish class activities, she was also willing to postpone the final deadline for the project because she believed that students could accomplish the task given enough time. In the second interview, she said that the whole point of assessment is not just to test students but to help them achieve their best quality work (excerpt 5.19). In interview three, she said that postponing the deadline was a strategy on her part to keep students improving on their project, because she knew that once they got a grade, they would simply give up working on it (excerpt 5.20). So, while she believed that her students

had the ability to complete this project, she was also realistic about her students' habits and mindsets.

You know, we keep pushing back deadline for them because we are waiting for them, right, to improve [...] And we, I think we'll be very, very accommodating in terms of like, really the whole point assessment is not just test you, it's to help you to achieve your best quality work. Right? Yeah. Is there anything else that you think could have been done better?

(Excerpt 5.19, Jen, Interview 2)

I was trying to postpone the grade, cause I know once I give the grade they won't work on it, so I was trying to postpone the grade.

(Excerpt 5.20, Jen, Interview 3)

In assessment opportunity (i), Jen was clearly trying to connect with her students on a pop-cultural level by bringing her comic books and trading cards. While this was not entirely a success because her students did not seem to be familiar with this area of pop culture, she did not give up on using this to engage her students, perhaps believing that she could simply take this opportunity to introduce a new area of pop culture to the students. In interview two, Jen expressed a wish to not only help her students learn more online but also to develop a passion that would help them to do this (excerpt 5.21). In introducing a new hobby to students, there was always a chance that it would spark a new passion.

...for them, I think my challenge was them was not to do school. I wanted them to really be confident, and, uh, to be passionate to have something they believe in and something they are proud of, something that has their voice and their identity on it. [...] So that was, that was, um, I felt this really gave that opportunity.

(Excerpt 5.21, Jen, Interview 2)

In interview one, Jen showed that she was aware that her students come from very different backgrounds from her and that teaching them digital literacies was even more critical because they had not been exposed to the same things that she had. As mentioned before, she felt that by developing a passion for something online, they would be more engaged and less bored in school since they are not traditionally academically inclined (excerpt 5.22).

I think for my students coming from the kind of background [...] they come from right, a lot of them don't have much exposure. Even if they do have their computers, they're online, they don't really know how to use it first to help them to learn more; two, how do you construct an identity, you know, or find an identity, or discover an identity, you know, even when you're online, you know, even playing a game or you know, you're a gamer and all that. They don't have that sense, they just do it. Just play. Just to spend time. You know? [...] very few of them develop a passion [...] I think it's a myth to say that, oh, they will develop their passion and all that. I don't think the kind of interactions they have online will lead to that kind of passion. So, for me, I feel that online, the tools and the technology and the social world online and all that, all these are resources. [...] when they're guided, right? And they realize that there's so much more, there's so many interesting things, they get curious, they get interested.

(Excerpt 5.22, Jen, Interview 1)

Jen was aware that being biased against students who are not good at schoolwork is counter-productive, as it depressed students' motivation to work hard at school. By engaging the students' curiosity, she hoped to get them interested in learning not just for the sake of marks. Even the relatively small percentage of marks that students got for this project, Jen saw as a kind of reward for having put in time, effort, energy, and passion into the project (excerpt 5.23). In other words, students were being rewarded for the process rather than the result. If she could, and she

lacked time to do this, she would have asked students to collaboratively develop and negotiate grading rubrics with her (excerpt 5.30). This demonstrated that Jen believed her students had the capacity to do this.

...if they have done, they have explored and they have put in time, effort, energy, passion, then why not reward them?

(Excerpt 5.23, Jen, Interview 1)

She also expressed that by assessing the process rather than the product, students were more willing to take risks in what they did because they realized that at every stage they could improve further. In other words, it was not just a once-off—they could always do better the next time (excerpt 5.24). In interview three, she revealed that she hoped by giving them a project, they would have an opportunity to make up for their lack of test-taking skills. Some students might even be able to pass English Language because they did well in this assessment (excerpt 5.25).

Because they realise that, uh, you know, every stage they can improve. There is always another assessment [...] there's always a chance to kind of recover.

(Excerpt 5.24, Jen, Interview 1)

...at the end they realise that 'maybe that's the reason why I, I even cleared my English, that I actually cleared my English because I did the project'. [...] They already have a problem. They're not good test takers. The problem our kids here is that they don't realise that they're not good, good test takers and then, uh, then they also can work on projects where they're given a lot a time to manage.

(Excerpt 5.25, Jen, Interview 3)

Jen had the policy of getting her students to teach each other to use new technology. This was evident in how she did not mandate the use of specific apps or

micromanage how her students used apps, but instead let them work on the apps themselves the way they wanted to. She believed that she needed to trust her students to take risks. After all, the mistakes that they made would not cost them marks, and she always gave them the opportunity to re-submit their best work for assessment (excerpt 5.26).

...actually I always say, don't teach the kids how to use the tech, get the kids to teach the kids [...] the risk-taking that you see in my class, because I welcome, I welcome mistakes [...] That means their mistakes won't cost them their mark, so that makes it less y'know and I always try my best to get them to perform, the final product, the final submission, it's something that they, it's based on what they have tried to improve yah.

(Excerpt 5.26, Jen, Interview 2)

At this point, Jen had been teaching for 19 years and believed that by putting students first, she could avoid taking things personally or emotionally. In other words, even if she might feel some anger, taking the bigger perspective helped her to get past it. In fact, she claimed that she seldom got really angry or discouraged at this point (excerpt 5.27).

...because I always put the students first so, and if you put the students first then nothing else matters, yah. [...] So it's difficult to get really angry nowadays, really angry. [...] No lah I'm not easily discouraged.

(Excerpt 5.27, Jen, Interview 3)

To conclude, Jen built motivating relationships by connecting learning to student interests and providing pathways to success. Her growth mindset encouraged perseverance and risk-taking. Jen aimed for authentic engagement, not just performance. Relationships founded on care and high expectations enabled Jen to stretch learners' potential.

External constraints – ‘I’m a very resilient person’

It's all right I'm a very resilient person. I don't, like I said, I don't think a problem is a problem if I can solve it [...] But I have learned to see that sometimes even if it is not going the way I see it's going, I think just being exposed to it and being aware that you can do things this way is a learning experience for the teacher and the students.

(Excerpt 5.28, Jen, Interview 2)

In general, Jen did not encounter many technological limitations in teaching her classes. This was not because there were no limitations per se, but more because she anticipated the major ones and preempted them by preparing workarounds (excerpt 5.28). For instance, to mitigate the slow school WiFi and data SIMs in the iPads, she used her own mobile WiFi hotspot to support a few devices at a time.

As for the minor ones, she minimised them by letting students have the flexibility in picking the best app for their needs (unless it was a mandated one such as Haiku Deck or Storify). When students did encounter problems, she gave advice when she felt this was needed. Introducing multiple alternative apps to students also helped students to work flexibly. This was perhaps a risky move because students could have been confused, but fortunately I did not observe this to be the case.

Jen's familiarity with the limitations of the infrastructure, as well as her experience with dealing with them in the context of the school, prepared her to anticipate and overcome problems presented by technology. Her attitude was that she had to be creative and flexible in finding solutions on her own, as she could not rely on the help of colleagues (excerpt 5.29).

Because I don't choose to use one app, so it doesn't really matter, there's always an alternative. I'm already quite familiar with the limitations of the infrastructure. So, in a way, we have worked it in such a way that the kids can

either, you know, use their own device, okay, or I share my internet connection with them, or they can do something else first and then, you know, follow up at home, you know, that kind of contingency. So, like I said, these are all given. So, in a way I really anticipated all these problems. [...] So, for me, I've always been like, okay, if it's a problem and nothing is moving, then I won't rely on those traditional ways of solving the problem. I'll just do whatever. I will work around that problem. To me, in the school, that's what you need to do, or else if you're going to depend on people to help you solve the problem, you never get anything done.

(Excerpt 5.29, Jen, Interview 2)

Jen also regretted that she could not be more ambitious in her assessment plans simply because time did not allow it. As mentioned previously, she would have wished to have her students co-construct the assessment criteria, but time was against her. She was particularly sore about the fact that the poor timetabling had made this worse (excerpt 5.30). Time limitations also meant that there were some things she could not do in class such as the Google search task; as a result some students actually did not do it.

Like I said, I mean, my initial ideal situation is I actually wanted more student co-construction of the assessment criteria, but really just to teach them how to come up criteria, it's gonna take a long, long, long period of time. So, and that's something we don't have. And we don't have also because they took away my periods, and like I said before about the periods, how they're separated, it wastes a lot of time in between.

(Excerpt 5.30, Jen, Interview 2)

In addition, she felt that not being able to observe all student interactions and collaboration was a disadvantage because she could not therefore assess all the processes that occurred and give relevant feedback, such as on how to interact

online. This happened because sometimes students would interact and collaborate on other platforms she had no access to (excerpt 5.31). This was especially important because she felt that communication and collaboration was a major weakness of her students.

So that's, that's another problem but they do, after a while, I did tell them, okay, I need you to think about, for example, scribing, yah like during your meetings what did you all discuss, what's the agenda, so that helps a bit *lah*. But nothing beats like really seeing the conversation evolve.

(Excerpt 5.31, Jen, Interview 2)

The expectations of parents were also sometimes problematic. For instance, there was a possibility that not all parents would accept the practice of peer feedback, perhaps because they felt this was not as valuable as teacher feedback (excerpt 5.32).

Really, for me, really it's about getting the students to be assessors as well. I want them to play a more active role no matter whether, you know... But then you have a problem here with that because this school doesn't practise that. Even us doing that peer thing, I mean, I think we were, like, very brave.

(Excerpt 5.32, Jen, Interview 2)

Finally, big class sizes were always challenging because it meant that she was not able to give more attention to each individual student, and it was difficult to give lessons the kind of development they deserved (excerpt 5.33). This made it even more important that students supported each other as peers, and had good relationships with each other (excerpt 5.34).

One of the things that you realize with very big classes like ours [...] it's really impossible to ensure that, you know, that kind ideal you read in the literature, ideal interaction and build up of this course is quite impossible to

happen in that space within that 50 minutes or more. And our students, and then taking into consideration our students, right, and how what we are doing is not mainstream, it's not a current kind of culture in the other classrooms...

(Excerpt 5.33, Jen, Interview 2)

[...] I want the peers to help. So, what I do is I let the peers influence them because then the good ones will always be able to, you know, influence the ones that are not so good. And therefore, that's why I always work on, actually, I don't really work that much on, you know, you have to like me, but I want you to like each other. As in like, like each other in terms of like, you trust each other to, you know, respect each other and work together. And listen to other people's advice and go to them for help if... I think it's easier for the peers to actually help each other and be a role model.

(Excerpt 5.34, Jen, Interview 2)

In conclusion, Jen proactively overcame infrastructure limitations and time pressures through flexibility, contingency planning, and resilience. However, large class sizes, limited observation of online interactions, traditional expectations, and time constraints persisted as challenges.

Summary

In this chapter, I provided an in-depth examination of Jen's approach to assessing digital literacies through a curation project in her secondary school classroom. The analysis began with insights from an initial interview. Classroom observations were then analysed across three key stages. Using Wiliam and Thompson's (2008) formative assessment framework, I found that Jen demonstrated strong formative assessment practices overall, including successfully facilitating discussions, providing constructive feedback, and emphasising student ownership.

The complex elements influencing Jen's assessment approach were also analysed in depth. She exhibited relatively sophisticated digital literacies by scaffolding complex concepts, allowing flexible tool use, and focusing on mindsets over specific skills. Her assessment literacies were evidenced through effective monitoring, dialogic feedback, and developing student feedback literacies. Jen also displayed a growth mindset towards learners by connecting to their interests, providing support, and focusing on the learning process over products.

However, Jen still faced substantial contextual constraints. These included infrastructure limitations, time pressures, traditional assessment expectations, large class sizes, and limited visibility into online collaborative interactions. Despite her proactive efforts to overcome these challenges through flexibility, contingency planning, and resilience, they could not be completely mitigated and continued to impact her assessment practices, as she acknowledged in the interviews.

In conclusion, Jen leveraged alternative assessments and technology in a learner-centred manner to develop students' digital literacies, demonstrating the potential of innovative assessment practices. Her resilience, empathy and willingness to innovate enabled meaningful learning experiences for her students. It was also evident that addressing contextual constraints through systemic changes and increased support for teachers could create more conducive environments for the effective assessment of digital literacies.

Chapter 6: Discussion

6.1 Introduction

This chapter provides interpretation and analysis of the study's key findings, structured around the four research questions underpinning the study. I first summarise the findings of how teachers' formative assessment practices influenced their assessment of digital literacies (RQ1), followed by the specific assessment literacies needed for effective evaluation of digital literacies in the classroom (RQ2). I then summarise findings regarding how teachers' own digital literacies shaped their evaluation of their students' work (RQ3) and how teacher-student relationships, expectations, and mindsets impacted on this assessment (RQ4).

Having addressed the research questions, I discuss expanding assessment literacy models to include digital literacies, indicating potential areas for expansion and considering the impact of generative AI on these models. Specifically, I describe an expansion of the TALiP model to include development of a digitally literate teacher identity. I then discuss the importance of teacher-student relationships in the digital age, presenting study findings on relational aspects, speculating on the effect of generative AI on these relationships, and strategies for fostering positive relationships. I end by addressing multimodal production tasks (of which the digital curation task is an example) more generally, discussing their advantages, challenges, and considerations for implementation in group work. I contemplate their implications on policy and practice.

6.2 Summary of key findings

To recap, this thesis has presented findings from an ethnographic case study focusing on two teachers, Jen and Yvette, to explore the elements that impact the effective assessment of digital literacies in the classroom. The study sought to answer four research questions (RQs):

RQ1: How do teachers' formative assessment practices impact the assessment of digital literacies?

RQ2: What specific assessment literacies are required for teachers to effectively assess digital literacies in the classroom?

RQ3: How do teachers' own digital literacies affect their assessment of digital literacies in learners?

RQ4: How do teacher-student relationships, expectations, and mindsets affect the assessment of digital literacies?

RQ1: How do teachers' formative assessment practices impact the assessment of digital literacies?

In comparing the formative assessment practices of Yvette and Jen, distinct differences emerge in their approaches to fostering student learning and digital literacies. The table below summarises the analyses of their practices (table 6).

Table 6 Yvette and Jen's formative assessment practices

Yvette	Jen
<ul style="list-style-type: none"> • Learning goals and success criteria were not always clearly established before tasks, causing confusion among students. • Classroom discussions and tasks sometimes lacked sufficient structure and direction to support student learning. • Feedback tended to provide answers rather than actionable guidance to help students improve. • Group work encountered challenges like coordination issues that hindered effective peer collaboration. • Students displayed limited autonomy and ownership over their learning, relying heavily on Yvette for guidance. 	<ul style="list-style-type: none"> • Expectations and success criteria were usually clearly established, providing direction for students. • Hands-on activities and rich discussions facilitated conceptual development and use of digital tools. • Jen gave insightful, timely feedback focused on improving student understanding and competencies. • Collaborative group structures promoted peer learning. • Jen fostered student autonomy through accountability, justification of choices, and emphasis on ownership.
<p>In Stage 1 (Understanding Curation), key issues included unclear expectations, insufficiently structured discussions, generalised feedback, and limited learner ownership.</p> <p>In Stage 2 (Haiku Deck Presentations), there was a lack of clear goals, limited scaffolding, unconstructive feedback, and insufficient student autonomy.</p> <p>In Stage 3 (Choosing a Topic), goals and scaffolding were unclear, targeted feedback was limited, and student ownership lacking.</p> <p>In Stage 4 (Storify), explicit expectations and modelling were insufficient, personalised feedback was absent, peer supports were limited, and learner autonomy needed boosting.</p>	<p>In Stage 1 (Introducing Curation), Jen introduced concepts clearly, designed engaging tasks, monitored progress, and provided feedback to further understanding.</p> <p>In Stage 2 (Haiku Deck Presentations), expectations were clear, scaffolding facilitated presentations, and feedback focused on improvement.</p> <p>In Stage 3 (Storify Curation), Jen emphasised justification of choices for reflective learning.</p>

Yvette's practices revealed some possible reasons for the lack of success with the curation task. There was often no explicit expression of learning goals and success criteria, leading to confusion amongst students. Classroom discussions and tasks under her guidance sometimes lacked the necessary structure to effectively support learning, and the feedback she provided to students tended to give direct answers rather than actionable advice to encourage self-improvement. Group work in Yvette's classes faced coordination issues, and students generally displayed limited autonomy, relying heavily on Yvette for direction. Throughout the various stages of learning, from understanding curation to creating Storifies, Yvette's formative assessment strategies did not fully align with effective practices as outlined by Wiliam and Thompson. Despite her consistent checks for understanding and responsiveness, the clarity of her intentions, the quality of her feedback, and the effectiveness of collaborative learning structures needed enhancement to truly support her students' development in digital literacies.

In contrast, Jen's formative assessment methods showed a stronger alignment with Wiliam and Thompson's (2008) best practices. She typically established clear expectations and success criteria, which provided her students with a distinct sense of direction. Her classroom was characterised by engaging, hands-on activities and rich discussions that facilitated not only conceptual understanding but also the practical application of digital tools. Jen's feedback was insightful and timely, focusing on improving student skills and understanding. Collaborative group structures in her class promoted peer learning effectively. Although there was room for more structured peer feedback, Jen's practices generally fostered a greater sense of student autonomy, with students being held accountable and encouraged to justify their choices, thus taking ownership of their learning.

Across the project stages, Jen provided clear guidance and appropriate scaffolding to support her students. For instance, in introducing the concept of curation and during Haiku Deck presentations, she set clear expectations and provided feedback that was

focused on skill development. Although there were opportunities for further enhancement, such as providing more demonstrations or increasing peer feedback, Jen's overall approach was comprehensive. She leveraged various strategies, such as open-ended questions and reflective moments, to facilitate meaningful learning discussions. Even though her use of collaborative structures was effective, she recognised the potential for incorporating more structured peer feedback. Jen also encouraged student ownership of learning, which could be further enriched by involving students in co-constructing rubrics and leading more class discussions.

The study revealed that teachers' use of formative assessment strategies has a significant influence on their ability to develop students' digital literacies. When teachers facilitate meaningful learning discussions, ask thoughtful open-ended questions, provide personalised feedback focused on improvement, and create a participatory assessment culture, they are better able to support the collaborative, critical thinking, and technological competencies involved in digital literacies. For instance, Jen demonstrated particular adeptness in using probing questions and reflective moments to further student understanding and engagement with digital platforms. In contrast, overly directive questioning, an emphasis on correctness over constructive feedback, and limited peer collaboration can restrict the emergence of these multilayered competencies.

RQ2: What specific assessment literacies are required for teachers to effectively assess digital literacies in the classroom?

Yvette struggled to consistently demonstrate some key assessment literacies that are important for the effective evaluation of digital literacies. There were instances where the communication of expectations and criteria was unclear, resulting in student confusion over task requirements. In interviews, Yvette acknowledged that she wanted to improve in 'giving timely feedback' and in her questioning techniques. She admitted to struggling with 'setting assessment questions' and picking texts suited to her students' proficiency levels.

Yvette also found scaffolding complex digital literacy tasks challenging. Her feedback tended to concentrate more on correctness (or her idea thereof) than providing constructive, forward-focused guidance tailored to learners' needs. Additionally, she did not fully leverage the affordances of digital platforms to enable efficient and dialogic feedback loops between herself and students. Yvette expressed in interviews that she had tended to see technology as merely a 'replacement' rather than something that could transform assessment.

In her lessons, there was often a heavy focus on task completion and adherence to specific instructions rather than allowing flexibility and cultivating learner autonomy, although Yvette also voiced her frustration over students' lack of initiative and independence. At the same time, Yvette encountered difficulty in pitching questions at an appropriate level for her students and adapting her strategies when they were struggled. This was perhaps a sign that Yvette had (subconsciously) a summative assessment mindset, even when performing formative assessments.

In contrast, Jen exhibited stronger alignment with assessment literacies that are key to the development of digital literacies. She recognised assessment as an ongoing process, saying in interviews that feedback should always make students think 'What's next?' She was also more adept at setting clear expectations and criteria. She was able to scaffold multi-step, complex tasks by providing models and step-by-step guidance. She gave timely, insightful feedback concentrated on specific areas for improvement, which made it easier for her students to use the feedback.

Jen also effectively leveraged her chosen digital platforms (with her students) to facilitate responsive feedback loops and enable ongoing dialogue with and between learners. She balanced structure with flexibility in order to encourage student autonomy, as well as to mitigate unavoidable constraints. Moreover, Jen tailored her strategies, questioning techniques, and support to students' levels in order to bridge comprehension gaps. She was able to set clear expectations, break down complex

digital tasks into scaffolded steps, provide insightful personalised feedback, leverage technology for responsive feedback cycles, and balance structure with flexibility.

RQ3: How do teachers' own digital literacies affect their assessment of digital literacies in learners?

The study revealed that teachers' own digital literacies can significantly influence their assessment literacies, with regard to assessing digital literacies. Jen's approach to technology use in the classroom was flexible and goal-driven. She was a role model for students, demonstrating that the focus should not be on the tools themselves but on how they can be used to accomplish learning objectives. She acknowledged that digital literacies involve developing new social practices over time, rather than simply acquiring isolated skills. Her emphasis was on fostering critical thinking dispositions in her students, rather than just honing digital skills.

In contrast, Yvette seemed to underestimate the complexity of digital literacies. She was unable to fully leverage the affordances of digital tools and occasionally used them in ways that seemed disorganised. Her attempts at technology integration often lacked coherent scaffolding of digital strategies, resulting in a more fragmented learning experience for her students. She was also more rigid in her approach to technology use, rather than encouraging a responsive, needs-driven selection of digital tools.

Jen also demonstrated a deeper understanding of digital literacies, as exemplified by how she used the concept of 'filter' to explain curation to their students. Jen used a concrete, physical analogy to introduce the abstract concept of 'filter.' She drew attention to the filtration of orange juice to separate the pulp, linking this to filtering unwanted information when curating online content. (This aligned with her overall strategy of scaffolding complex concepts using relatable examples.) In contrast, Yvette did not use a physical analogy. She simply explained filtering as the process of separating wanted from unwanted information when curating. Her explanation was

more direct but lacked the concrete example to aid comprehension. Additionally, Jen intentionally drew students' attention to the concept of 'filter' by getting a student to explain it to the class. This indicated that she recognised it as an important conceptual building block.

The findings from this study suggest that teachers' own digital literacies can play a significant role in their assessment of digital literacies in learners. Teachers who model flexible and goal-oriented use of technology can foster a healthier view of digital literacies in students. Recognising that digital literacies involve developing new social practices and critical thinking dispositions over time, rather than merely acquiring isolated skills, can enhance the assessment process. Conversely, underestimating the complexity of digital literacies and failing to fully leverage the affordances of digital tools can negatively impact the assessment of digital literacies. A rigid approach to technology use and a lack of coherent scaffolding of digital competencies may result in less effective assessment outcomes.

RQ4: How do teacher-student relationships, expectations, and mindsets affect the assessment of digital literacies?

The study suggests that positive teacher-student relationships, expectations, and mindsets are pivotal in creating productive digital literacy assessment experiences. Jen's interactions with her students conveyed a deep-seated belief in their potential. She challenged them while also providing empathy, support and encouragement. Even when faced with constraints, she kept her focus on addressing students' developmental needs. On the other hand, Yvette often had expectations that did not align with her students' capabilities, which led to frequent bouts of frustration for all concerned. A sociocultural disconnect between her and her students further exacerbated the situation. To some extent, her perception of students as lacking in motivation and independence became a self-fulfilling prophecy, which hindered the development of a growth mindset (Dweck, 2016).

In such contexts, therefore, teachers who express a belief in their students' potential and provide empathetic support tend to foster a more positive learning environment. This environment can better nurture the development and assessment of digital literacies. By the same token, misaligned expectations and sociocultural disconnects can create challenging learning environments and impede effective assessment. Negative perceptions of students can become self-fulfilling prophecies, hindering the development of a growth mindset essential for digital literacies.

In summary, the findings demonstrate the profound influence teachers can have on the assessment of digital literacies. Formative assessment practices, specific assessment literacies, a teacher's own digital literacies, and teacher-student relationships, expectations, and mindsets all play critical roles in shaping digital literacies assessment practices. A teacher's ability to foster meaningful learning conversations, promote student reflection, and create a participatory assessment culture can significantly enhance the assessment of digital literacies. Mastering specific assessment literacies such as setting clear learning objectives, providing personalised feedback, and using digital platforms for efficient feedback loops can make a significant difference as well. Moreover, a teacher's own digital literacies impact these assessment practices; teachers who are flexible and goal-oriented in their use of technology can foster a more authentic understanding of digital literacies in students. Lastly, positive teacher-student relationships and a growth mindset can create a conducive learning environment for the development and assessment of digital literacies.

The complex interactions between teachers' assessment and digital literacies, their relationships with students, and their specific assessment practices take place within a broader educational context. The resources available within this context, such as access to technology, professional development opportunities, and support from school leadership, can also have a significant influence on the effectiveness of digital literacies assessment in the classroom. Yvette and Jen, who work in the same school,

faced similar contextual constraints, including infrastructure limitations, time pressures, traditional assessment expectations, large class sizes and limited visibility into online collaborative interactions (spaces they were not invited into). However, despite having access to the same resources and limitations, they were differently impacted by this shared context. This highlights the importance of individual teacher qualities, such as their own digital and assessment literacies, attitudes towards students, and resilience in the face of challenges, in shaping their experiences and the effectiveness of their assessment practices. Ultimately, the success of digital literacies assessment in the classroom is a product of not only the broader contextual resources and support structures in which teachers operate but also their individual capacities to navigate and overcome the limitations of their environment.

6.3 Revising assessment literacy models for digital literacies

Potential areas for model revision/expansion

My study has called attention to the necessity for an expanded assessment literacies model that incorporates digital literacies. This revised model would need to incorporate several crucial aspects for effectively integrating digital assessment. As mentioned in the literature review, while current models are moving in the right direction, the role digital literacies play has tended to remain understated.

Firstly, I argue that the new model should stress the importance of teachers cultivating their own digital literacies, in order to exploit technology effectively for assessment. It should extend beyond a focus on technical skills, and emphasise the impact of a teacher's mindset and identity as a digitally literate educator. This identity can dramatically influence their assessment practices. As we saw with Yvette, the less digitally literate teacher, underestimating the complexity of digital literacies hindered her ability to effectively assess them. Conversely, the more highly literate Jen's flexible and goal-driven use of technology showcased effective digital practices. Encouraging such a positive teacher identity through communities of

practice (CoPs) (Wenger-Trayner & Wenger-Trayner, 2015) and mentorship could lead to more authentic assessment of digital literacies in students.

Secondly, this development of teacher identity should encompass the cultivation of positive teacher-student relationships. Not only does this strengthen the teacher's capacity for successful digital literacies assessment (as discussed in the literature review), but it also complements a growth mindset in both teacher and students, and benefits the emotional well-being of all. As we saw in Yvette's classroom, her generally negative attitude formed a barrier to her effective assessment of digital literacies (or at least strengthened the barrier). Despite her belief in the importance of the curation task, she nevertheless struggled to establish a rapport with her students that would have helped them to achieve better assessment outcomes. Jen, on the other hand, maintained a stronger rapport with her students, even though she was hardly the sort to sugarcoat her criticisms. I sensed that her students trusted her to be fair and have their interests at heart, and this could have encouraged them to take her negative feedback in the spirit it was meant.

Thirdly, the model should highlight that clear task design, and communication of expectations and assessment criteria are essential for effective technology-assisted assessment. Digital tasks, being often multimodal, can become complex and cognitively demanding for teachers and learners alike. Both Yvette and Jen's students struggled with unclear expectations (albeit to different degrees), and better communication could have alleviated this. Professional development programmes could focus on nurturing these digital assessment design literacies. Teachers need to understand how different modes and media can be integrated into assessment tasks and how these tasks can be used to assess a wide range of digital literacies.

Fourthly, the model should acknowledge that digital contexts require a re-evaluation of what constitutes assessment literacies. Tasks like digital curation require a higher degree of sophistication in areas such as visual literacy and information literacy, which tend to play a more minor role in traditional assessments. Aspects like

metacognition, self-regulation and design thinking are also increasingly relevant in the digital age. An expanded model could also outline a set of digital literacies teachers need to develop to be effective digital assessors. These may include understanding the pedagogical affordances and constraints of different classes of digital tools, being able to design multimodal assessment tasks, and knowing how to assess multimodal works effectively. Jen was able to design the curation assessment task and guide her students to overcome challenges because she possessed such literacies to a higher degree.

Along the same lines, assessment literacies should also emphasise quality feedback, well-structured peer collaboration and learner autonomy, all being vital when assessing with technology. Traditional models tend to focus narrowly on the assessor-student dynamic, but digital assessment tools afford greater agency to students. This was demonstrated by Jen, who leveraged digital platforms for peer feedback and placed a strong emphasis on student ownership. Professional development programmes could focus on developing competencies in facilitating digital peer feedback and learning.

Finally, revised models must recognise that systemic constraints continue to exist when integrating technology into assessment. Constraints such as high-stakes testing pressures, restrictive technology policies, and limited time continue to limit the possibilities for digital assessment. Both Yvette and Jen faced these barriers, though Jen was better able to work around them. The model should also include a focus on the development of digital assessment policies. This includes considerations such as ensuring that all students have equal access to digital tools, addressing issues of the digital divide (van Dijk, 2020), and developing policies that uphold academic integrity in digital assessments (P. Dawson, 2020). These issues are perhaps beyond the control of teachers and students, since they require top-down initiatives to resolve. Nevertheless, by not underestimating their outsized roles, we can better manage our expectations, and advocate for institutional reforms when we can.

Implications of generative AI on assessment literacy models

Even as I write this thesis, the advent of generative AI, like OpenAI's GPT-series, is making waves in education. This technology has profound implications for assessment literacies in the digital age (Liu & Bridgeman, 2023). Such models can generate human-like text, making them powerful tools for educational practices, including assessment. However, their use may also demand a further expansion of assessment literacy models. Because research into its impact is so nascent and the technology itself is developing at a highly exponential rate, I have chosen to discuss it separately.

The inclusion of AI in education requires the development of AI literacies among teachers (Gašević et al., 2023). AI literacies can be defined as the knowledge and understanding of AI's capabilities and limitations, the ethical considerations surrounding its use, and the proficiency in effectively employing AI tools within a given setting. With the use of AI in assessment, several ethical considerations arise. These include issues of privacy, data security, inherent biases and potential misuse of AI tools. For instance, an AI tool might use student data to provide personalised feedback. If this data is not properly secured, it could be vulnerable to data breaches, potentially violating students' privacy. At the same time, because Large Language Models (LLMs) are trained on human data, they possess similar biases (e.g., racism, sexism) (Swiecki et al., 2022). They are also infamously prone to 'hallucination', making information literacy all the more critical. Teachers therefore should be aware of these pitfalls and follow best practices to avoid them, so that they can guide students to do the same; this is, of course, part of digital literacies too.

With regard to the use of generative AI in language assessments, concerns have been raised over construct validity and fairness, equity and accessibility, bias and sensitivity, academic integrity and plagiarism, privacy and data security, and copyright and ownership (Voss et al., 2023). Voss et al. emphasised the need for the careful consideration and development of guidelines and policies for the appropriate

use of such assistive technologies. They argued that a balance must be struck between the potential benefits of these tools and the need to maintain the integrity, fairness, and validity of the assessments, through ongoing collaboration between test developers, AI experts and other stakeholders in the field of language assessment.

One specific challenge that generative AI introduces to assessment is the question of authenticity and originality. Given that AI tools can generate sophisticated, human-like text, the line between student work and AI-generated work can become blurred. For example, a student could potentially use a generative AI tool to write an essay for them. To counter this, a commonly proposed solution has been for teachers to shift their assessment focus to in-class essays or open-book exams with unique prompts that require personal reflection or application of knowledge to new scenarios. These approaches make it impossible or more difficult for students to draw on AI as a resource.

Another tactic has been to ‘fight fire with fire’: using AI-powered AI detectors to detect so-called ‘AIgism’. This may turn out to be a doomed arms race, however, as LLMs are rapidly growing larger and more sophisticated, outpacing the development of detectors. More alarmingly, much research in the last year, as chronicled by Bauschard (2023), has revealed that such detectors tend to have unacceptably high rates of false positives and false negatives. Text written by non-native writers (because of the way they have been trained to write) tends to suffer from a higher rate of false positives (Liang et al., 2023). Bauschard pointed out that this use could also serve to punish students who are less savvy with AI (and do not know how to circumvent such detectors) and/or are less affluent (and cannot afford to subscribe to more advanced chatbots that can circumvent such detectors). Finally, promoting the use of such tools privileges the narrative that business can continue as usual, and the ‘old wine in new bottles’ syndrome can live on.

Perhaps we should take this opportunity to rethink traditional assessment constructs instead. Instead of solely focusing on the product of learning, assessments should also highlight the process of learning (Lodge, 2023), as has already been discussed in this thesis. Bearing in mind that education should prepare students for their future lives and livelihood, a more authentic assessment of this kind would stand them in better stead; even as some current jobs are being made redundant with AI, more jobs are likely to be created that demand AI literate workers (Noenickx, 2023). Assessments should thus ideally reflect this new reality, and level the playing field by preparing everyone to write (well) with the assistance of AI tools, as well as protect themselves against known dangers posed by them.

While AI presents challenges to traditional assessments, it also offers opportunities to enhance assessment practices. AI can be used to automate certain aspects of assessment, provide immediate feedback (important for good uptake of feedback), and offer valuable data to inform instruction and assessment. For example, in language learning, a student may use an AI-based language learning application. The application could evaluate their language proficiency in real-time, highlighting areas of strength and weakness, and providing personalised feedback. This immediate feedback allows the student to adjust their learning strategies on the spot, aiding in more effective language acquisition.

AI chatbots can be used as a sounding board for learning processes like brainstorming, clarification of concepts, development of ideas, eliciting of feedback; essentially it plays the role of either a peer or teacher (or both) who is always available and non-threatening. While the user must exercise criticality when using it, its 'always on' advantage cannot be overstated. AI offers a multitude of advantages for formative assessment in particular. When asked for feedback, it can supply 'just-in-time' dialogic feedback, thus closing the feedback loop that is often sorely lacking in the assessment process (Carless, 2019). Teachers can use it to create assignment exemplars of different quality, so that students are better able to understand the

assessment criteria and expectations (To et al., 2022), and how their own work falls short.

To conclude, the emergence of generative AI models has profound implications for assessment literacies. As these tools are increasingly incorporated into education, teachers will need to develop new AI literacies to use them effectively and ethically for assessment, especially as human oversight is still critical. Assessment models and professional development must evolve to help teachers gain the literacies needed to deploy AI creatively while upholding academic integrity and preparing students for the world we now live in.

Expanding the TALiP model

The TALiP model (Xu & Brown, 2016) provides a strong foundation for understanding teacher assessment literacies, given its clear and comprehensive structure. However, as the cases of Yvette and Jen illustrate, if the model is to be applied to assessment of digital literacies, we would need to reframe and expand this model to adequately incorporate the digital dimensions that are increasingly prevalent in today's classrooms.

The *knowledge base* component of the TALiP model would need to go beyond understanding the core principles of assessment. It would also encompass a comprehensive understanding of digital literacies — including the use and impact of various types of digital tools, platforms, and multimodalities in an assessment context. This would involve knowledge of different software applications, online platforms, and digital tools, and how they can be used to facilitate technology-mediated assessments. In addition, teachers would need to understand how to design and evaluate digital tasks, and interpret and act on data from digital assessments.

While the model would indeed need to acknowledge the importance of technical skills, these should not be viewed as isolated components but rather as part of a

larger, interconnected web of competencies. Focusing solely on technical skills, without considering other components, such as attitudes, knowledge bases, and sociocultural influences, oversimplify the complexities of digital assessment literacies.

The *assessor identity (re)construction* element of the model would similarly need to be rethought to include the development of teacher identities as digitally literate assessors (further discussed below). This involves teachers not only being comfortable with using technology but also valuing its role in modern assessment practices. While Xu and Brown (2016) called attention to the significance of CoPs (Wenger-Trayner & Wenger-Trayner, 2015) in the development of teacher assessment literacies, such communities become even more crucial when it comes to assessing digital literacies. Supportive CoPs can play a key role in fostering these identities by providing safe spaces for shared exploration, reflection, and improvement of digital assessment practices. Addressing any negative attitudes or anxieties related to digital assessment, hopefully without judgement, can also help. This collaboration can facilitate the spread of effective digital assessment methods and stimulate innovative approaches to integrating technology. Without this ongoing peer support, teachers might regard the process of experimentation and troubleshooting as too daunting to undertake. For instance, at the time of data collection, informal CoPs for the use of educational technology were active on Twitter.

When considering *teacher assessment literacy in practice*, the sociocultural contexts that specifically shape digital assessment practices would also need to be incorporated into the model. This would include considerations of the broader policy environment, institutional norms, and issues related to access and equity. For instance, systemic issues such as unequal access to digital resources and tools could significantly impact the scope and effectiveness of digital assessments. Even in Singapore, with its high internet penetration rate, a reported 2% of households with

children who go to school full-time have access to the internet, but lack access to a computer (Tham, 2023). Acknowledging these realities within the TALiP model could facilitate a more holistic understanding of the challenges associated with digital assessment.

In conclusion, an expanded TALiP model would need to incorporate additional dimensions to fully encapsulate the digital realities of teacher assessment literacies. With added emphasis on digital knowledge bases, teacher identities, systemic contexts, and the importance of CoPs, this revised model could more accurately represent the complexity of developing and practising digital assessment literacies.

Developing digitally literate teacher identity

The cultivation of a teacher's identity as a digitally literate professional and individual, as already touched on, is crucial to success in assessing digital literacies. The failure to develop such an identity can hold a teacher back in their development as a competent teacher-assessor of digital literacies, as evidenced by the case of Yvette and Jen. With the advent of generative AI and more sophisticated automated assessment/learning analytics tools, there is also the danger of human judgement and expertise being marginalised if educators fall into the habit of deferring to algorithms (Swiecki et al., 2022), because they lack confidence in their own digital assessment literacies.

A primary challenge in this process is resistance to identity change, particularly in personal practices. Teachers are often comfortable with established methods and may feel threatened by the advent of new technologies or practices, especially given other sources of work-related stress. The transition from traditional methodologies to digital ones necessitates a shift in identity from a traditional teacher to a digitally literate educator. This shift can be intimidating and may lead to resistance among teachers, rooted in anxiety and uncertainty, and the reluctance to let go of established pedagogical beliefs and self-concepts (Henderson & Corry, 2021).

Professional development programmes play a pivotal role in addressing this resistance and enhancing digital literacies among teachers. These programmes should not just focus on the technical proficiency of operating digital tools. Instead, they need to cover a more comprehensive understanding of the digital landscape. This understanding encompasses designing digital assessment tasks, interpreting data from these tasks, and comprehending the pedagogical implications of integrating digital tools. They should also address emotional dimensions like anxiety, and support teacher identity development around technology use (Henderson & Corry, 2021).

Integration of digital literacies into a teacher's personal life is arguably an important aspect of overcoming resistance to identity change, and this is supported by Dujardin's (2012) and Tour's (2015) studies, as well the case of Yvette and Jen. Encouraging teachers to personally utilise digital tools and platforms, such as social media, blogging, podcasting, or content creation, may lead to a more intuitive and authentic understanding of digital platforms and their potential uses in an educational context. As teachers experience the benefits of these tools in their personal lives, they may experience a gradual transformation in their identity and become more open to incorporating them into their professional practices.

Promoting reflective practices among teachers is another key strategy. This encourages teachers to critically engage with digital tools and consider how their incorporation can enhance student learning outcomes. Reflecting on their identities as digital educators and how these identities influence their practices can further help teachers overcome resistance to change. A growth mindset towards technology can also be fostered, viewing technology as a tool for enhancing teaching practices and student learning experiences, rather than as a threat. Creating CoPs and addressing systemic constraints, as already mentioned, can also make a difference. When teachers feel supported and equipped, they are more likely to embrace digital literacies and the associated identity change.

Ultimately, the cultivation of digital literacies among teachers is an ongoing and complex process that requires patience, perseverance, and a supportive environment. It involves understanding digital literacies not just as the ability to use digital tools, but also understanding their ethical, social, and political implications. Resistance to identity change can be a significant hurdle, particularly in personal practices. However, with the right strategies and support, it is possible to mitigate this resistance and foster a positive identity as a digitally literate educator.

6.4 Importance of teacher-student relationships in the digital age

Study findings on relational aspects

This present study underscores the importance of robust teacher-student relationships. Despite the increasing integration of digital technologies in classrooms, the significance of these relationships remains unshaken. The introduction of novel digital tools into the classroom environment has the potential to induce apprehension or confusion among students, should it not be handled with the requisite sensitivity. In this regard, teachers operate as vital mediators. They are the facilitators of student interaction with emerging technologies, seamlessly bridging the gap between traditional methods of learning and those enhanced by technology. The research conducted by Edelenbos and Kubanek-German (2004) on diagnostic competence emphasised this point. Absent a caring and empathetic approach, students may find themselves overwhelmed or isolated in the face of new digital platforms. Conversely, when teachers establish a positive rapport with their students, the transition towards technology-based education can be considerably smoother. In this scenario, the role of the teacher extends beyond instruction to include emotional and technical support. This dual role aids students in comfortably navigating and exploring the unfamiliar terrain of digital tools.

Assessment, by its very nature, entails a degree of vulnerability and risk-taking on the part of students. To effectively assess competencies such as digital literacies,

students need to be situated in an environment where they feel safe enough to make mistakes, ask questions, and expose their thinking processes. To create such an environment, a foundation of mutual trust and respect between teachers and students is essential. Hence, the nurturing of close and caring relationships between teachers and students is a key component in the establishment of a psychologically safe space, which, in turn, enhances the effectiveness of assessments.

The development of digital literacies is not a process that follows a standard mould; instead, it is highly contextual. Given the fact that digital practices are socially situated, they tend to manifest differently across various contexts. Consequently, teachers need to be finely attuned to the specific needs of their students in order to provide appropriate scaffolding and support. Strong personal relationships between teachers and students can facilitate this level of sensitivity and responsiveness.

The advent of digital technology opens up new avenues for peer collaboration and learning. As teachers incorporate more digitally-mediated group work, they must skilfully manage and nurture the dynamics within the classroom, especially where younger learners are concerned. This involves preventing exclusion and cyberbullying (Hinduja & Patchin, 2010), managing conflict, and avoiding distraction. The role of teachers' compassionate mentorship is crucial in fostering positive peer relationships, thereby enhancing the sense of community and the overall learning experience.

The integration of digital assessment into the classroom signifies a considerable shift, not only cognitively but also emotionally, for both students and teachers. Warm teacher-student relationships (Rimm-Kaufman & Sandilos, 2015) can help alleviate the emotional transition that such changes inevitably induce. A caring teacher can better support students in their journey to develop new digital literacies, providing the necessary patience, empathy, and guidance. In classrooms that are rich in digital practices, teachers can stand as exemplars of digital literacy practices for their students. Their personal habits, attitudes, and mindsets can have a profound impact

on shaping the students' learning experience. The reverse can also occur, of course, with teachers learning the digital practices of their students, and guiding them to develop related digital literacies.

The introduction of generative AI tools like OpenAI's GPT-series in education has the potential to revolutionise teaching practices and reshape classroom dynamics. These technologies can enhance personalisation and differentiation by customising learning experiences based on students' individual needs. However, while AI can augment teachers' ability to tailor instruction, teachers must maintain an active role in the process to ensure students feel seen and valued (Chan & Tsi, 2023). An over-reliance on these technologies could decrease personal interaction between teachers and students, emphasising the need for teachers to strike a balance between technology use and personal interaction.

The integration of generative AI in classrooms also introduces various challenges, including the need for AI literacies (Gašević et al., 2023) among teachers and students, ethical considerations such as privacy, data security, biases and potential misuse, as well as disparities in access to technology. Teachers play a crucial role in guiding students through these challenges, fostering an environment of trust and mutual respect through open dialogue and clear expectations about academic honesty and the ethical use of AI tools. The advent of AI might also hasten the shift from the teacher as a 'sage on the stage' to a 'guide on the side', necessitating a solid teacher-student relationship where students feel supported and guided despite the potentially discomfoting change in roles.

In short, despite digital technologies altering classroom dynamics within the assessment process, they do not diminish the fundamentally human relationships that underpin teaching and learning. The teacher-student relationship remains a crucial component of this process. Teachers, serving as thoughtful mentors, can guide students to develop new digital literacies within a collaborative, safe and caring environment.

Strategies for fostering positive relationships in the digital age

As digital technologies increasingly permeate the educational landscape, the need to fortify teacher-student relationships is more critical than ever (Pianta et al., 2012). These relationships, the bedrock of effective learning, provide students with the necessary guidance and support to navigate the digital terrain. The integration of digital technologies into classrooms necessitates a harmonious blend of traditional interpersonal skills and an understanding of the dynamics introduced by digital tools (Ribble, 2015). This section explores a variety of strategies for fostering resilient teacher-student relationships in digitally-enhanced classrooms:

1. **Emphasise communication:** Clear, open, and frequent communication is vital. In a digitally-enhanced classroom, teachers should aim to establish channels that are accessible and comfortable for students (Nowell, 2014). These can range from traditional face-to-face conversations to digital methods such as emails and chat platforms.
2. **Provide support:** When students grapple with unfamiliar digital tools, they need both emotional and technical support. Teachers should display patience, empathy, and be prepared to help with technical issues (Ertmer et al., 2012). Even in a digital classroom, the importance of a teacher's presence cannot be overstated. Teachers need to be available and responsive to students, showing that they are cared for and supported, whether in person or online.
3. **Model digital etiquette (Ribble, 2015) and respect boundaries:** Teachers can guide students on how to interact appropriately online, covering aspects such as respecting others' opinions, understanding privacy and security, and avoiding cyberbullying (Hinduja & Patchin, 2010). Digital technologies can blur the lines between school and home, so it is essential for teachers to maintain these boundaries. This means not overloading students with online work and respecting their time outside of school hours. This also serves to benefit the teacher.

4. Create a safe digital environment and show empathy: Teachers need to establish an online space where students feel secure enough to express themselves and learn from their mistakes. This involves setting expectations for online behaviour, promoting positive interactions, and addressing any harmful behaviour promptly (Ribble, 2015). Understanding the challenges and frustrations that come with learning new technologies, and showing empathy when students struggle, can help build a strong emotional connection with students.
5. Encourage collaboration (So & Brush, 2008): Digital tools often offer new ways for students to collaborate on assignments or projects. Teachers can harness these opportunities to guide students to work together effectively in digital spaces (Johnson & Johnson, 2009). Such practices can build a sense of community online, and foster healthy relationships between students as well.
6. Personalise learning (Keefe & Jenkins, 2000): Digital tools enable greater personalisation in learning. Teachers can use these tools to cater to the individual needs of each student, thereby showing that each student's unique learning process is valued (Tomlinson, 2014).
7. Embrace lifelong learning (*Education for Life and Work*, 2012): Teachers should be open to learning new technologies and even from students, as this can greatly enhance the teacher-student relationship by making the teacher more relatable as a fellow learner.

Cultivating resilient teacher-student relationships in digitally-enhanced classrooms necessitates a multifaceted approach. By integrating these strategies into their teaching practice, educators can foster positive relationships with their students, thereby supporting effective learning in a digital context.

6.5 Multimodal production tasks as innovative assessments

It has been said that 'video is the new text'. The emergence of multimodal production tasks in classrooms is being recognised as a promising pedagogical strategy, particularly in the digital age where students are increasingly exposed to

multifaceted communication that combines text, images, audio, video, and other media (Kimber & Wyatt-Smith, 2008; Lotherington & Ronda, 2014). As illustrated in the digital curation project, such tasks have the potential to serve as innovative assessments. They enable students to represent their understanding in diverse ways, thereby offering a more holistic snapshot of student learning. By fostering creativity, critical thinking, and digital literacies, multimodal tasks are aligning classroom experiences more closely with real-world communication practices.

However, despite their significant potential, the implementation of multimodal tasks is not without its challenges. These tasks necessitate careful planning and substantial support to ensure their effectiveness. The literature suggests that there is still a gap between the teaching and assessment of multimodal literacies, emphasising the need for further research and development in this area (L. Tan et al., 2020). The practical experiences of educators like Yvette and Jen shed light on these complexities, providing valuable insights for other educators.

Advantages and challenges of multimodal tasks

A key advantage of multimodal tasks is their capacity to engage students in diverse modes of communication. In the digitally-mediated world that we live in, texts are inherently multimodal, combining linguistic, visual, audio, gestural, and spatial resources. Multimodal production tasks provide an opportunity for students to develop relevant literacies. By creating content that combines different modes, students can gain an appreciation of the complexity of communication and the unique affordances of different media.

Beyond language education, the interdisciplinary nature of multimodal tasks makes them applicable across various subject areas. For instance, students could be tasked with creating a video presentation to explain a scientific concept or use digital storytelling to explore historical events. This helps to foster a cross-curricular approach to learning (such as the project that the students in the study had

completed previously), enhancing students' understanding and application of knowledge. Despite their potential, implementing multimodal tasks can be challenging. Both Yvette and Jen faced difficulties in providing adequate scaffolding for complex tasks like designing Haiku Decks and Storifies, albeit to different degrees. Some students struggled to understand the high-level expectations and criteria for success, which likely led to confusion and frustration. When assessment criteria are not negotiated between the teacher and students, they can negatively affect the development of multimodal literacies in practice (Godhe, 2013). This highlights the need for clear, explicit teaching of 'multimodal grammar' (Cope & Kalantzis, 2009), and discussion of design choices, to support student learning. This in turn requires that the teacher have a good grasp of multimodal production herself; in this present study, Yvette's lack of interest and experience in digital curation was a disadvantage. Unsurprisingly, teachers' lack of knowledge in assessing multimodal literacies is a major obstacle to changing assessment practices in education (Aagaard & Lund, 2013).

The cognitive demand of multimodal tasks is another significant challenge. Students need to manage multiple modes of communication, which can be cognitively taxing (Guichon & Cohen, 2016). Moreover, technical difficulties can create additional hurdles. While digital tools can facilitate collaboration, feedback and access, they can also create new challenges in terms of managing workflow, maintaining focus, and ensuring equitable participation. Therefore, educators need to carefully plan, stage and manage multimodal tasks to ensure they are feasible and productive. Once again, their success will be dependent on their own experience both as a teacher-assessor of such tasks and a creator of multimodal content.

Considerations for group work in multimodal tasks

Group work is often employed in multimodal tasks to foster collaboration and peer learning. However, assessing individual contributions in group tasks can be challenging (Silseth & Gilje, 2019). Yvette and Jen both encountered difficulties in

ensuring that all students contributed equally and constructively. This underscores the need for clear group norms, roles, and structures, as well as strategies to hold students accountable for their individual contributions.

On the other hand, digital tools can be a boon for group work in multimodal tasks, facilitating communication, workflow, and feedback. Jen's experience shows how digital tools can enhance accessibility and cooperation in group tasks. However, technical limitations and off-task behaviour can undermine the benefits of digital tools; educators need to ensure that students are guided in the effective use of these tools, and that there are clear expectations and routines for their use.

Policy and practice implications of multimodal tasks

The practical implications of these experiences suggest that educators need to carefully plan and manage multimodal tasks. This includes providing clear directions, examples, and criteria for success, as well as scaffolding the development of multimodal literacies. Teachers may need to devote time to explicitly teaching the 'grammar' of different modes, discussing the impact of design choices, and providing feedback on students' multimodal work. More time could be devoted to analysis of both professional and student exemplars, though understandably this could be difficult to fit into the timetable.

Educators also need to consider the logistical aspects of implementing multimodal tasks. This could involve ensuring access to necessary technology, managing group work, and designing tasks that are feasible within the time and resources available. Furthermore, educators need to consider how to assess multimodal tasks fairly and effectively. This could involve using rubrics that capture the complexity of multimodal work and ensuring that students are clear on the assessment criteria. L. Tan et al. (2020) argued that assessments of multimodal literacies should acknowledge and value the process, not just the artefact, and use flexible assessment criteria that develop learners' meta-semiotic awareness and

metalanguage of multimodal texts. This is in line with Jen's approach as well, as evident in the data.

The experiences of educators like Yvette and Jen, along with the growing body of research on this topic (Lim et al., 2022), provide valuable insights into the potential of multimodal tasks and how they can be successfully facilitated. While criticisms and hurdles exist, they should not deter the exploration of multimodal tasks but rather serve as reminders of the need for careful design and implementation. The potential benefits include students' engagement, motivation, self-efficacy, and identity expression in carrying out multimodal tasks. Assessing multimodal tasks, especially authentic ones, not only makes learning more inclusive and engaging, but also reflects the realities of our digital age, preparing students for its complexities and opportunities. They offer a relevant and engaging way to build digital literacies, and as we move further into the digital era, they can help equip our students for a future where these literacies are highly valued.

6.6 Conclusion

The findings from this study highlight the profound influence that teachers can exert on the assessment of digital literacies in the classroom. Formative assessment practices, assessment literacies, teachers' own digital literacies, and teacher-student relationships all emerge as crucial determinants shaping this assessment process. Ultimately, it is the ability to create participatory assessment cultures, provide personalised feedback, leverage technology's affordances, and nurture supportive learning environments that enable teachers to perform the complex task of effectively assessing newly emerging digital competencies.

This discussion synthesises these key elements, offering insights into evidence-based policies and pedagogies for enhancing the digital assessment of digital literacies. However, this study represents an early exploration into these multifaceted issues. Further research examining teachers' assessment of digital literacies across diverse

educational contexts is warranted. As digital technologies continue to evolve and reshape classrooms, so must teachers' capabilities to meaningfully assess students within these digitally-mediated spaces. With concerted efforts towards teacher professional development and reflective practices, the promises and perils of technology integration can be successfully navigated. This will ensure students are provided with the requisite 21st-century competencies to fully participate in an increasingly digital world.

Chapter 7: Conclusion

7.1 Summary of Key Findings

This thesis presents a comparative study between two teachers, Jen and Yvette, to investigate drivers of effective digital literacies assessment in classrooms. The key findings are as follows:

1. *Impact of teachers' formative assessment practices:* Jen's formative assessment practices, which focused on meaningful learning discussions and student reflection, positively impacted digital literacies assessment. Yvette's emphasis on tasks and content coverage, without opportunities for reflection, resulted in a less effective, teacher-centred approach.
2. *Specific assessment literacies for digital literacies assessment:* Competencies such as setting clear goals, task scaffolding, and providing insightful, learner-specific feedback were shown by Jen, leading to effective digital literacies assessment. Yvette's less individualised approach and focus on correctness instead of improvement limited her effectiveness.
3. *Influence of teachers' own digital literacies:* Jen's flexible, goal-driven approach to technology use positively influenced her digital literacies assessment. Yvette's underestimation of the complexity of digital literacies, coupled with a rigid approach to tech use, hindered her assessment capabilities.
4. *Effect of teacher-student relationships, expectations, and mindsets:* Jen's belief in her students' potential, coupled with empathetic support, fostered a positive learning environment for digital literacies development and assessment. Yvette's misaligned expectations and negative perceptions of students impeded effective assessment.

The study underscores the significant influence of teachers' formative assessment practices, specific assessment literacies, personal digital literacies, and their

relationships, expectations and mindsets on the digital assessment of digital literacies. It provides valuable insights that can guide the development of more effective teaching and assessment strategies in our increasingly digital world.

7.2 Theoretical contributions

This study makes several noteworthy theoretical contributions to the field of digital literacies assessment. Firstly, it expands the view of language assessment literacy (LAL) (Inbar-Lourie & Levi, 2020; Levi & Inbar-Lourie, 2020; Scarino, 2013) by taking into account the assessment of digital literacies. The study highlights that effective LAL in today's classrooms necessitates knowledge and competencies specifically related to assessing students' digital literacy practices. It argues for a reconceptualisation of LAL that incorporates the multifaceted nature of digital literacies assessment.

There are similar implications for other models of teacher assessment literacies, such as the Teacher Assessment Literacy in Practice (TALiP) model by Xu and Brown (2016), the Teacher Assessor Identity Model by Looney et al. (2018), and the three-dimensional model of assessment literacy proposed by Pastore and Andrade (2019). The study highlights the particular assessment literacies teachers require to effectively evaluate digital literacies in the classroom. It identifies competencies such as designing authentic multimodal tasks, leveraging digital tools for efficient feedback, and balancing structure with flexibility. The study's proposed expansion of assessment literacies models to incorporate these digital dimensions makes an important theoretical contribution.

Secondly, the study provides valuable theoretical insights into how teachers' formative assessment practices (Black & Wiliam, 1998; Wiliam & Thompson, 2008) shape the development and assessment of digital literacies. The comparative case analysis of two teachers' contrasting approaches elucidates the profound influence that skilful formative assessment can have on building students' digital

competencies. The study's examination of formative assessment strategies advances theoretical understanding of this important linkage.

Thirdly, the study demonstrates the integral role teachers' own digital literacies play in shaping their digital assessment capabilities and practices (Dujardin, 2012; Tour, 2015). The analysis of how the two teachers' digital literacies and mindsets influenced their assessment approaches provides theoretical insights into this relationship. It highlights that developing teacher digital identity is key.

Finally, the study reveals the significant impact of teacher-student relationships, expectations, and mindsets on the successful assessment of digital literacies. Examining the data elucidates how sociocultural dynamics and internal belief systems can enable or hinder meaningful assessment. This advances theoretical perspectives on the affective, relational facets of assessment (Edelenbos & Kubanek-German, 2004; Rimm-Kaufman et al., 2015).

This study's in-depth analysis of digital literacies assessment practices in real-world contexts makes substantive theoretical contributions. From expanding notions of LAL to highlighting key assessment literacies, it provides critical insights to guide policies, pedagogies and future research. The multifaceted view presented enriches theoretical discourse on this increasingly vital issue.

7.3 Methodological contributions

The methodological contribution of this study to research on classroom assessment practices is significant, particularly through its adoption of an ethnographic case study approach. This approach offers several advantages, as it provides an in-depth, contextual understanding of assessment practices within specific classrooms.

Firstly, it demonstrates the value of an ethnographic case study approach to gain a nuanced, contextualised understanding of assessment (Fusch et al., 2017), of digital literacies and in general. The combination of prolonged classroom observations,

teacher interviews, artefact analysis and thematic analysis provides a multidimensional perspective on real-world assessment practices (Yin, 2014). This responds to calls for more classroom-based ethnographic research in assessment (McNamara, 2001; Rea-Dickins, 2001).

Beyond assessment and digital literacies, this study strongly advocates for the wider adoption of ethnographic case study as a robust methodology. It demonstrates the suitability of this approach for investigating other classroom phenomena from a social practice perspective (Trowler, 2014). The study provides a model for how intensive qualitative techniques can uncover the nuances of any classroom practice. This positions ethnographic case study as a versatile and incisive tool for examining the intricacies of real-world educational contexts.

Secondly, this study highlights the importance of longitudinal engagement in research. It traces the evolution of a digital curation task from its inception to completion, offering valuable insights into how assessment practices unfold over time within a teacher's class (Hamilton & Corbett-Whittier, 2012). The extended period of observation allowed for a detailed understanding of the nuances and changes in assessment approaches, which would not have been possible with a shorter observation period.

Finally, the rigorous in-depth qualitative approach underscores the unique value of case studies in providing richly contextualised, practice-based insights. The granular analysis of situated practices demonstrates the capacity of case studies to uncover nuances that surveys or experimental designs cannot capture (Merriam, 2009). It contributes methodologically to fields like education research, applied linguistics, and teacher training that seek to understand the dynamics of real-world classrooms, not just abstract theories. The contextualised insights can inform policy, practice and teacher education aimed at enhancing classroom processes.

This study makes notable methodological contributions through its novel application of an ethnographic case study approach to provide an in-depth, longitudinal perspective on classroom assessment practices. It advocates for the wider adoption of this methodology to investigate the complexities of educational contexts.

7.4 Practical contributions

This study offers several practical contributions to teachers and policymakers to enhance classroom assessment practices and address the challenges of digital literacies in 21st-century education. The first significant finding of this research reinforces the necessity for teacher training and professional development in digital literacies. It is crucial that teachers themselves possess these literacies to effectively design and evaluate relevant assessment tasks for their students. Moreover, consistent guidance, support, even mentorship, are vital as teachers implement these new forms of assessments in their classrooms.

The study findings underscore the need to expand and diversify teacher professional development to include the building of assessment literacies for digital contexts. This expansion should encompass a broader understanding of these new literacies, incorporating facets of multimodal assessment that embrace the various ways in which information can be presented and interpreted, and the exploration of digital feedback mechanisms that can enhance student engagement and learning outcomes.

At the same time, this research brings to light the potential of multimodal production tasks for authentic, engaging assessment of digital literacies. Careful planning and scaffolding are necessary for the successful implementation and assessment of these tasks. In line with this, the study proposes several key considerations for the successful execution of multimodal tasks and group work. These include the establishment of clear criteria, provision of technical support, ensuring individual accountability, and effective digital workflow management.

The study also highlights the need to nurture a teacher's identity as an assessor of digital literacies, as evidenced by the differing attitudes of Yvette and Jen. Although this identity shift can present challenges, it can be facilitated through strategies such as establishing communities of practice, where shared learning and mutual support can occur, and incorporating technology into personal daily routines, which can enhance familiarity and comfort with digital practices.

The research illuminates specific strategies for teachers to bolster their formative assessment practices critical for the development of students' digital literacies. These strategies include facilitating reflective dialogue through probing questions, enabling students to think critically about their learning; providing actionable feedback that is clear, specific and linked to learning objectives, thereby aiding students in identifying their strengths and weaknesses; and fostering learner autonomy, which can instigate self-directed learning, motivation and engagement.

This study also emphasises the importance of fostering positive teacher-student relationships and a growth mindset in enhancing the development of digital literacies. Positive relationships encourage open dialogue and trust, which can lead to more effective assessment of digital literacies. The cultivation of a growth mindset, where students understand their abilities can be developed through effort, can also positively impact their learning trajectory and assessment outcomes. These findings suggest that educators and institutions should focus on strategies that nurture strong teacher-student bonds and promote a growth mindset, such as professional development programmes, constructive feedback practices and an overall supportive learning environment.

Lastly, policymakers must consider the need for reforms to overcome systemic constraints that limit innovative assessment of digital literacies. These constraints include the pressures of high-stakes testing, limitations in infrastructure, and deeply entrenched norms. For these reforms to be successful, the provision of more time and resources is paramount, suggesting a need for comprehensive policy changes.

To summarise, this study offers practical insights that can guide teachers, schools, and policymakers in enhancing assessment practices to meet the demands of 21st-century education. The development of teachers' digital and assessment literacies, harnessing of multimodal tasks, fostering of growth mindsets, and addressing of systemic barriers are key areas of focus for this endeavour.

7.5 Limitations and further research

This qualitative study has limitations typical of in-depth case studies. The findings originate from a small sample size of two classes and their teachers. However, generalisability is not the primary goal of qualitative research (Cronbach, 1975; Stake, 1995); generating universally applicable results is more associated with quantitative studies. The aim here was a granular analysis of specific contexts, not broad generalisability. The value lies in the depth of understanding and insights into nuanced dynamics within situated practice. As Lincoln and Guba (2000) argued, 'the only generalisation is: there is no generalisation' in qualitative research. Rather, the emphasis is on particularisation - aiming to capture the uniqueness and complexities of the case.

The intent is not to produce findings generalisable to all contexts, but rather to provide a nuanced perspective on the specific cases (Stake, 1995). Wider applicability relies on transferability rather than generalisation (Simons, 2009). Therefore, the small sample size is reasonable and enables rich qualitative insights. The issues explored likely have parallels in other settings, but the focus is an in-depth understanding of particular cases. The insights can inform further research in broader contexts and allow readers to assess potential transferability. For instance, the highly specific context of the Singapore education system, with its emphasis on high-stakes testing, may limit the transferability of these findings to other settings. The systemic constraints and cultural norms described in this study may not be relevant or applicable in different educational contexts. Therefore, caution should be exercised when attempting to extrapolate these results to settings that are not

similarly exam-focused. Where points of similarity in contexts exist, however, the insights gained can still serve as a valuable starting point for understanding and addressing the challenges of assessing digital literacies.

Time constraints present another significant limitation. The timeframe of the study may have restricted the depth or breadth of the investigation. Changes in teaching practices and outcomes for students may not be immediately evident and may only emerge over a more extended period. The limited timeframe of this study might therefore have affected the comprehensiveness of the findings. Longer-term studies, such as 'full-blown ethnograph[ies]' (Wolcott, 2008, p. 178), could provide deeper insights into the evolution of teachers' digital literacies practices and their impact on students. In the same vein, the study's focus on a single curation project spanning one term presents another limitation. While this project offers a valuable case study, concentrating solely on one short-term project only provides a snapshot as opposed to a long-term view of the phenomenon. The study of teachers' assessment practices across an academic year or longer could reveal developmental patterns and provide a more comprehensive understanding.

There is the potential for researcher bias (Simons, 2009). Despite my efforts to practise reflexivity throughout the study, it is important to acknowledge that all researchers bring their own perspectives and biases, which can inadvertently influence the collection and interpretation of data. While reflexivity can help mitigate this bias to an extent, it cannot completely eliminate it. In addition, unforeseen circumstances prevented member-checking, which could have validated the findings and minimised the potential for researcher bias (Simons, 2009; Stake, 1995). Consequently, the findings and interpretations of this study remain influenced, to some degree, by my own perspectives. For instance, as a teacher educator, it was difficult to divorce that aspect of my professional mindset from that of a novice researcher's, to step back and analyse the data more objectively, while still maintaining the emic perspective of an ethnographic researcher.

I considered a restricted range of perspectives in this study. The primary focus was on the perspectives of teachers, which, while invaluable, does not incorporate the views of other key stakeholders in the education system such as students and parents. This limitation can potentially narrow the breadth of the findings. Although students participated in questionnaires and interviews, and some of their class discussions were audio-recorded, this data was not utilised in the analysis because the focus was on the teachers. This decision was made to maintain the study's emphasis on teacher assessment practices. However, this approach inevitably narrows the scope of perspectives present in the findings. The student data remains largely untapped and could offer complementary insights into the phenomena under investigation. For instance, students' responses in questionnaire and interviews could provide a more nuanced understanding of their experiences with the curation project, their perception of the related practices, and the impact on their learning. Therefore, the lack of student perspective in the study's primary analysis is a notable limitation and represents a potential area for future research.

The current study focused solely on digital literacies as part of English language education, leaving room for similar exploration in other subject areas like mathematics, science, and humanities. How do assessment needs and practices differ across disciplines? Do teachers require distinct assessment competencies depending on the content they teach? Comparative studies could identify subject-specific assessment literacies and contribute to a more comprehensive understanding. Similarly, the role of multimodal assessments across the curriculum also deserves further attention. These types of assessments have the potential to enhance learning in diverse subjects, but several questions remain: How can such assessments be implemented effectively? What support do teachers need to use them successfully?

Lastly, the advent of emerging technologies like generative AI-based tools necessitates a review of existing assessment models, teacher competencies, and

policies (Lodge et al., 2023). These technologies pose multidimensional challenges, prompting a rethinking of notions of academic integrity, privacy, equity and the role of automation in assessment. Future research should consider these evolving dynamics to ensure that assessment practices remain relevant, fair and effective in the digital age.

Despite its limitations such as a small sample size, time constraints, potential for researcher bias, and a single perspective focus, this study provides a rich, contextual understanding of the digital literacies assessment practices within the Singapore education system. These limitations also delineate pathways for future research, suggesting the need for longitudinal studies, inclusion of diverse perspectives, and exploration of different educational contexts and subject areas.

7.6 Concluding remarks

My ethnographic case study has illuminated the influence teachers have in shaping the assessment of digital literacies in Singapore's secondary school classrooms. The findings spotlight formative assessment practices, digital and assessment literacies, expectations, relationships, and systemic constraints as critical elements shaping the efficacy of assessing digital literacies. They reveal both the challenges and opportunities inherent in assessing such literacies within an examination-oriented education system, in the face of persistent systemic constraints. Educators like Jen exemplify how innovation, fuelled by relevant literacies, perseverance, and a learner-centred approach, can flourish even under such circumstances. In an intriguing turn of events, Yvette left the teaching profession five years after data collection – a move that did not entirely surprise me considering the marked difference in her perception of teaching as compared to Jen's sense of vocation. This perhaps confirms that she was a poor fit for the profession, at least in the 21st-century.

My experience as a participant-observer with the students and teachers in this study offered invaluable first-hand insights into the realities of implementing pedagogical

change in schools. My interactions with them not only informed my analysis but also reshaped my perspective on equitable, empowering education. I was able to witness the immense potential of thoughtful technology integration and formative assessment, along with the friction arising from policies, norms and beliefs that can obstruct change, with students who might be considered underperforming (and some underprivileged).

Rapidly advancing technological advancement, in particular the unprecedented development of generative AI, further amplifies the urgency for a revolution in assessment. Without such reforms, it becomes drastically difficult to ensure validity in assessments. Generative AI, with its unique capability to create novel, human-like content, presents distinct challenges to traditional forms of assessment. Assessments may need to shift their focus from product to process (as Jen did), and from a sole focus on testing knowledge recall or problem-solving skills, to evaluating students' ethical and effective use of AI tools, or their critical thinking and creativity in addressing complex, real-world problems.

The double-edged sword of generative AI also unlocks new opportunities for a revolution in assessment. The potential affordances it has for providing personalised feedback, tracking learning progress over time, and adapting assessments to individual learners' needs and abilities, with an ease not possible before, could transform the traditional high-stakes, summative assessment process into a more formative, learner-centred one more in-line with assessment in the digital age. This transformation would necessitate significant shifts in policy, teacher education and educational/assessment culture. It would involve cultivating in teachers the necessary digital and assessment literacies, through professional development and peer support, in addition to fostering an educational system that values and rewards innovative, learner-centred assessment practices. This may be difficult when traditional high-stakes examinations dominate the lives of students, exerting a powerful washback effect.

Though daunting, this may prove to be a watershed moment for educators, when the digital assessment of digital literacies finally shifts from being relegated to the domain of innovative educators, to a curriculum norm designed to prepare all students for life in the 21st-century and beyond. In this new world, teachers such as Jen would no longer be 'telling cases', but representative of the norm, and worthy of study only for their generalisability.

Chapter 8: Coda

In the spirit of reflexivity, and given the time that elapsed between data collection and completion of the writing process, this coda serves to further reflect on the key themes and implications of this study, situating the findings within the rapidly evolving educational technology landscape, particularly in light of the advent of generative AI. It revisits several key aspects of the study: the complexity of teacher assessment literacies, the methodological intricacies of defining and operationalising formative assessment, the evolving state of educational technology, and the relevance of the study's insights beyond the Singaporean context. Throughout, I aim to provide a reflective and forward-looking commentary on the study's implications and the broader educational landscape.

8.1 The complexity of teacher assessment literacies

This study illuminated the multifaceted nature of teacher assessment literacies, particularly in the context of assessing digital literacies. The conclusions support the claim that teacher assessment literacies are a complex interplay of a teacher's knowledge base, conceptions of assessment, socio-cultural contexts, and professional identity (Xu & Brown, 2016). In contrasting the cases of the two teachers, the findings highlight the need to nurture not just technical competencies, but also reflective practice, adaptive expertise, and a strong sense of professional identity in teacher education and development. This complexity in teacher assessment literacies is closely tied to the multifaceted nature of teacher professionalism. Teacher professionalism encompasses specialised knowledge developed through the integration of theory and practice, ethical responsibilities balancing student needs and societal interests, the ability to navigate uncertainty, and the influence of broader systemic contexts (Tatto, 2021). Thus, just as assessment literacies are influenced by a teacher's individual experiences and

contexts, teacher professionalism more broadly is also moulded by the complex interplay of personal, institutional and societal factors.

The findings of this thesis have important implications for understanding and nurturing teacher professionalism in the post-pandemic digital age. First, the study highlights the centrality of teachers' digital literacies as an integral aspect of their professionalism. These literacies encompass technological skills, pedagogical knowledge, critical dispositions, and contextual awareness, rather than a generic set of technical abilities. Second, the variability found in the opportunities to develop digital literacies in teacher education suggests a need for more consistent and comprehensive approaches to preparing digitally literate teachers. This has implications for teacher education curriculum, practicum experiences, and professional development, beyond the more prevalent 'quick fix' solutions. Long-term mentorship and support, and a sympathetic understanding of the complexities of the average classroom are crucial (Skantz-Åberg et al., 2022). Finally, the rapidly evolving digital landscape and the rise of phenomena like generative AI lend urgency to the importance of future-oriented, adaptable digital literacies as part of teacher professionalism. This calls for an ongoing, inquiry-based stance in pre-service teacher education and continuing professional development to equip teachers to navigate the challenges and harness the potential of emerging technologies.

This expanded view of teacher professionalism (and reconceptualisation of teacher education and professional development) might involve a shift towards more practice-based learning, where teachers have opportunities to experiment with digital tools in authentic classroom settings and reflect on their experiences. It could also include more personalised learning paths, allowing teachers to focus on developing the specific digital and assessment literacies they need based on their subject area, school context, and individual strengths and weaknesses. Moreover, there could be a greater emphasis on fostering collaborative learning communities,

both within and across schools, to facilitate ongoing mentorship, the sharing of best practices and collectively navigating the challenges of teaching in the digital age.

8.2 Defining and operationalising formative assessment

In this study, formative assessment was defined as the process of eliciting, interpreting, and using evidence of student learning to make decisions about next instructional steps (Black & Wiliam, 2009). However, operationalising this in the analysis required careful discernment. Not every classroom interaction could be considered formative assessment. Following Hill's (2012) approach, I focused on key 'assessment opportunities' - discrete tasks or activities that aimed to provide information about students' understanding or skills - as the unit of analysis. It should be noted that the terms 'formative assessment' and 'assessment opportunities' were not necessarily part of the teachers' own cognitive frameworks, even if they carried out formative assessment practices. These terms were used to gain 'analytic purchase' on the data.

On reflection, precisely defining and operationalising formative assessment was a crucial methodological consideration. Researchers undertaking similar studies should carefully consider how to define the boundaries of formative assessment episodes within the complex, dynamic context of classroom interaction. This may involve developing detailed criteria for what counts as an 'assessment opportunity'. For instance, should it include only events the teacher explicitly intended to be formative assessment? Should more subtle, integrated assessment practices that are harder to demarcate as discrete 'opportunities' be included? Ultimately, transparently communicating one's definition and operationalisation of formative assessment is essential for the clarity and replicability of the research.

8.3 The evolving state of educational technology

Since the period of data collection in 2014, the educational technology landscape has evolved significantly. However, the underlying principles and affordances of these

tools - such as collaborative writing, multimodal composition, content curation and social sharing - remain relevant. New tools and platforms continue to emerge to support these practices (such as Wakelet, a content curation app popular with educators as of time of writing). This rapid evolution of technologies is epitomised by the current developments in generative AI. These AI tools are advancing at an unprecedented pace, with new capabilities and applications emerging constantly, almost daily.

This presents both opportunities and challenges for education. On one hand, generative AI could potentially transform learning and assessment, enabling personalised feedback, adaptive content, and creative exploration. While its biases have been well publicised, it could also potentially cover some of the blind spots that humans have due to individual ingrained assumptions. On the other hand, it raises complex questions around the role of the teacher, the nature of knowledge and skills, and the ethics of AI use in education. There is a need to understand how students are interpreting and using AI outputs. As with digital curation, the key is not the specific tool, but the underlying literacies and pedagogies. Teachers will need to develop the critical and creative capacities to navigate this AI-enhanced landscape, to harness its potential while mitigating its risks.

This shifting landscape has implications for teacher professional development. Rather than focusing on specific tools, training should emphasise the pedagogical principles and practices underpinning effective technology integration. Teachers need to develop the adaptability to navigate evolving tools, the discernment to select tools fit-for-purpose, and the creativity to harness their affordances for learning. The continued development of assessment literacies for digital contexts is crucial. This includes understanding the possibilities and limitations of AI for assessment, designing authentic multimodal assessments, and using digital data (even learning analytics) to inform instruction and facilitation. Ongoing professional learning,

reflective practice, and peer collaboration will be key to helping teachers stay abreast of technological developments.

8.4 Relevance beyond the Singapore context

While situated in Singapore secondary schools, this study's insights have broader relevance. At its core, this study highlights how teachers' beliefs, experiences, and interactions with students shape assessment practices. This human element is transferable across contexts. As we navigate the rise of generative AI in education, the human dimension has become even more pivotal. While AI tools may automate certain aspects of assessment or content creation, they cannot replace the relational, contextual, and ethical dimensions of teaching. It is the teacher who must design meaningful learning experiences, foster supportive relationships, and guide students in the responsible use of AI. Their role shifts from being a primary source of knowledge to being a facilitator of learning, helping students navigate the complexities of an AI-mediated world. This requires a re-envisioning of teacher professional identity and development, but the centrality of the teacher-student relationship remains constant.

This study also offers a relatable portrayal of the realities of classroom assessment beyond public schools in Singapore. It validates the challenges teachers may face in integrating digital technologies and provides a model of reflective practice in Jen. It invites teachers to examine their own assessment literacies and provides a framework for doing so. Moreover, the study contributes to broader discussions around the assessment of 21st century competencies and/or digital literacies, the role of formative assessment, and the professional development needs of teachers in the digital age.

To conclude, this study illuminates the intricate tapestry of elements shaping digital literacies assessment, offering transferable insights for enhancing assessment practices and supporting teacher development in diverse educational settings.

Ultimately, it is the human element - the teacher's criticality, life experience, and ability to meaningfully integrate technology - that makes the difference in effectively assessing and cultivating students' digital literacies. As we stand on the cusp of an AI revolution in education, this message is more pertinent than ever. It is not the technology that will transform learning, but the teacher who wields it with wisdom, care and purpose.

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Appendix A – Unit plan

Unit plan extract — Curation Project (by Jen)

Time Frame	Learning Tasks	Explanation of Rationale	Resources
Wk 5-9 Digital Literacy: Online Curation - Reading, Writing, Connecting and Producing Knowledge	TASK 1: Introducing students to the concept of curation - Before showing video, get students to find out the meaning of curation using a dictionary - Get them to think about the CONNECTION between CURATION and LEARNING, and why we are learning how to curate information. They could brainstorm ideas or questions they	- this unit on curation integrates active reading / writing in the context of digital literacy, where reading / writing processes and the flow of those processes have evolved depending on the mode of texts / and types of digital tools being used, and the digital writing produced. - Curation can be broken down into 3 related processes - SEARCH / COLLECT / SELECT	1. What is Curation - Vimeo Video 2. Robin Good on Good Curation 3. Seth Godin - The trap of social media noise 4. Pecha kucha (some info for teachers) or another one from Prof Hacker 5. Robin Good - Content Curation Visualized (PINTEREST) 6. Storify on Curation as a Tool

	<p>have that they can't answer.</p> <p>- Show the video - get students to take notes focusing on what is curation, why do we need to curate, how do we curate.</p> <p>- The article by Seth Godin is worth discussing with students, but it's not easy to understand without context, but it's worth looking at some of his key ideas:</p> <p>a) title -social media noise</p> <p>b) social media as soapbox , everyone wants to be louder, and looking for a better megaphone</p>	<p>- Each of these stages / process involves use of different types of curation tools, depending on the purpose. It also involves skills / strategies that are familiar to students in other contexts of learning eg research skills, questioning skills, etc</p> <p>- the CONNECTION with Project-based learning is quite clear, especially the DIGITAL TOOLS that enable SEARCH (part of research), collection which in involves bookmarking certain sites / texts (like bibliography / sources),</p>	<p>for Teaching and Learning</p> <p>7. Search Strategies</p> <p>Google Lesson Plans</p>
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	<p>c) diff bet megaphone and telephone</p> <p>PERFORMANCE TASK (AFL):</p> <p>- Students in groups (3-4) to prepare a series of IMAGES (20 images / slides each for 20 sec) - so students can ONLY talk for about 20 secs about what CURATION is / why it is a valuable skill to learn, and how it relates to literacy skills.</p> <p>(PECHA KUCHA presentation format, the students can google and find more information on their own)</p>	<p>discussing/ questioning / unpacking / analysing these texts (critical annotation skills), and the final SELECTION based on certain evaluation criteria, the driving question(s) that students developed at the beginning of search, and also in the process of search / collecting sources.</p> <p>- students apply critical thinking, analysis and evaluation in the process of curating sources of information based on a DRIVING QUESTION (with NO fixed answer).</p>	
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	<p>- Students could refer to this Pinterest site for a collection of useful sites about curation. (even the storify link: Curation as a Tool for Teaching and Learning)</p> <p>Task 2: Building Good Search Skills</p>		
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Appendix B – Assessment rubric

Curation Project assessment rubric (by Jen)

Below Expectation (0-7)	Meeting Expectation (8-11)	Exceed Expectation (12-15)
<p>Driving Question</p> <ul style="list-style-type: none"> - There is no / little evidence of an attempt to develop a driving question that is focused and realistic in scope. - There is little / no evidence of an attempt to revise driving question according to group generated criteria 	<p>Driving Question</p> <ul style="list-style-type: none"> - There is some attempt to develop a driving question that is focused and realistic in scope, but may lack clear direction. - There is some evidence of an attempt to revise driving question according to group generated criteria, though criteria may be vague or not clearly understood. 	<p>Driving Question</p> <ul style="list-style-type: none"> - There is a good attempt to develop a driving question that is focused and realistic in scope, exploring topic in a clear direction that is based on criteria generated. - There is some evidence of an attempt to revise driving question according to group generated criteria, with a clear understanding of criteria shown.
<p>Developing Criteria for Filtering / Evaluating SOURCES of CONTENT</p> <ul style="list-style-type: none"> - There is no/ little evidence of any criteria developed 	<p>Developing Criteria for Filtering / Evaluating SOURCES of CONTENT</p> <ul style="list-style-type: none"> - There is some evidence of 	<p>Developing Criteria for Filtering / Evaluating SOURCES of CONTENT</p> <ul style="list-style-type: none"> - There is good evidence of a set of criteria

<p>to select / choose SOURCES</p> <ul style="list-style-type: none"> - There is no / little evidence of any discussion to evaluate the different sources of content and what / how to filter (for example on gdoc or diigo annotations) 	<p>developing criteria to select / choose SOURCES</p> <ul style="list-style-type: none"> - There is some evidence of discussions about the different sources of content, though the discussion may not show clearly the rationale given for the choices made for what / how to filter (for example on gdoc or diigo annotations) 	<p>developed to select / choose SOURCES</p> <ul style="list-style-type: none"> - There is no / GOOD evidence of discussions to evaluate the different sources of content and what / how to filter, with members showing a reasonably good understanding of criteria.(for example on gdoc or diigo annotations)
<p>FINAL STORIFY</p> <ul style="list-style-type: none"> - Organisa tion of final curated sources lacks a clearly defined or coherent structure to organise the sources and the writing - Writing shows little or no attempt to synthesize key perspective or arguments from each 	<p>Final Storify</p> <ul style="list-style-type: none"> - Organisatio n of final curated sources shows some evidence of a clearly defined or coherent structure to organise the sources and the writing - Writing shows little or no attempt to synthesize key perspective or arguments from each source, and 	<p>Final Storify</p> <ul style="list-style-type: none"> - Organisation of final curated sources shows some evidence of a clearly defined or coherent structure to organise the sources and the writing - Writing shows little or no attempt to synthesize key perspective or arguments from each source, and only manages a skimpy summary of 2-3 sentences.

<p>source, and only manages a skimpy summary of 2-3 sentences.</p> <ul style="list-style-type: none"> - Writing is merely a copy and paste of sources. - There is NO variety of sources used, and limited to text only articles, mostly from one source eg Google. Did not draw on other sources from social media or non-text sources - 	<p>only manages a skimpy summary of 2-3 sentences.</p> <ul style="list-style-type: none"> - Writing shows an fair attempt to develop a context to introduce the topic / issue to audience/readers. It shows an attempt made to reflect thoughtfully on the perspectives/ arguments that are relevant to the driving questions, though there is a tendency to accept the perspective/s without evaluation of the validity/ relaibility of arguments. - There is some variety of sources used, with some attempt to use sources from social media or non-text sources 	<ul style="list-style-type: none"> - Writing shows a good attempt to develop a context for the topic / issue to readers/ audience that hooks their interest and curiosity. Writing shows an ability to reflect thoughtfully on the perspectives/ arguments that are relevant to the driving questions, and some attempt to question or evaluate the validity/ relaibility of arguments. - There is a variety of sources used, with good attempt to use sources from social media or non-text sources
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Appendix C – Consent forms

Participant information sheets and consent forms



Date:

INFORMATION SHEET FOR TEACHER PARTICIPANTS

Description

As part of my PhD studies in the Department of Linguistics and English Language, I intend to carry out a classroom research study to provide insights into how digital literacies (i.e. the ways people use and produce digital media) are assessed in school. I would be very grateful if you would agree to take part.

If you consent to participate in this study,

- a. You will be interviewed, and participate in focus group discussions about your own beliefs, teaching practices, and perceptions of digital literacies and assessment. I will audio record these sessions.
- b. I will provide you with copies of your audio recordings from interviews, for your own professional development.

Duration

Scheduling for meetings, interviews, etc. will be arranged around your teaching duties. The study will begin in June 2014 and end December 2014.

Participation

I would be grateful if you would agree to take part in my study. Your participation is entirely voluntary. Your participation (or refusal to participate) will not affect your employment in any way.

You are free to withdraw from the study at any time. If you withdraw while the study takes place or until 1 month after the study finishes, I will not use any of the information that you provided. If you withdraw later, the information you shared with me will be used as part of the study.

Confidentiality

At every stage, your name and your school will remain confidential. The data will be kept securely, in a locked cupboard and/or encrypted files, and will be used for academic purposes only. This will include my PhD thesis and other publications, for example journal articles. Unless you instruct me to do otherwise, in my thesis and other publications I will not use your real name.

1

Risks and Benefits

There are no foreseeable risks to your participating in this study. The results of this study will enhance current practice and facilitate professional development. You are free to use your data for your own professional development.

More Information

If you have any queries about the study, please feel free to contact me at +65 96745859 or h.chan4@lancaster.ac.uk. You can also write to my supervisor, Dr Luke Harding, at l.harding@lancaster.ac.uk, or to the Head of Department, Professor Elena Semino, at e.semino@lancaster.ac.uk.

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UNIVERSITY OF LANCASTER

Department of Linguistics and English Language

Consent Form

Project title¹: **Investigating the assessment of digital literacies in a Singapore secondary school**

1. I have read and had explained to me by Chan Hsiao-yun the Information Sheet relating to this project.
2. I have had explained to me the purposes of the project and what will be required of me, and any questions have been answered to my satisfaction. I agree to the arrangements described in the Information Sheet in so far as they relate to my participation.
3. I understand that my participation is entirely voluntary and that I have the right to withdraw from the project any time.
4. I have received a copy of this Consent Form and of the accompanying Information Sheet.

Teacher Participant's Name : _____

Teacher Participant's Signature: _____

Date : _____

¹ Please note that the project title is tentative.



Date: 30 June 2014

INFORMATION SHEET FOR STUDENT PARTICIPANTS

Description

As part of my PhD studies in the Department of Linguistics and English Language, I intend to carry out a classroom research study to provide insights into how digital literacies (i.e. the ways people use and produce digital media) are assessed in school. As your school has been doing innovative work in this area, I would like to invite you to participate in this study to help me understand how such assessments are best done in secondary school.

If you consent to participate in this study,

- a. I will observe and audio record a minimum of two series of three-week lessons. The scheduling of these lessons will be determined by the school. I will then transcribe the audio materials.
- b. You will participate in a focus group discussion about assessment tasks you have done in class.
- c. Copies of your digital work generated during the lesson observations and for assessment purposes will be given to me. You will retain the originals.

Duration

Scheduling for lesson observations and the focus group discussion will be arranged in consultation with your teachers. These sessions will be in Terms 3 and 4 2014.

Participation

I would be grateful if you would agree to take part in my study. Your participation is entirely voluntary. Your participation (or refusal to participate) will have no influence on your studies or final grades.

You are free to withdraw from the study at any time. If you withdraw while the study takes place or until 1 month after the study finishes, I will not use any of the information that you provided. If you withdraw later, the information you shared with me will be used as part of the study.

Confidentiality

At every stage, your name and your school will remain confidential. The data will be kept securely, in a locked cupboard and/or encrypted files, and will be used for academic purposes only. This will include my PhD thesis and other publications, for example journal articles. Unless you instruct me to do otherwise, in my thesis and other publications I will not use your real name.

Risks and Benefits

The only foreseeable risk to your participating in this study is minor distraction during lessons due to the presence of the audio equipment and the observer during the lesson observations. Other than this foreseeable risk, your participation in the research study provides you with the opportunity to reflect on and understand how you are assessed.

More Information

If you have any queries about the study, please feel free to contact me at +65 96745859 or h.chan4@lancaster.ac.uk. You can also write to my supervisor, Dr Luke Harding, at l.harding@lancaster.ac.uk, or to the Head of Department, Professor Elena Semino, at e.semino@lancaster.ac.uk.



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UNIVERSITY OF LANCASTER

Department of Linguistics and English Language

Consent Form

Project title: **Investigating the assessment of digital literacies in a Singapore secondary school**

1. I have read and had explained to me by Chan Hsiao-yun the Information Sheet relating to this project.
2. I have had explained to me the purposes of the project and what will be required of me, and any questions have been answered to my satisfaction. I agree to the arrangements described in the Information Sheet in so far as they relate to my participation.
3. I understand that my participation is entirely voluntary and that I have the right to withdraw from the project any time.
4. I have received a copy of this Consent Form and of the accompanying Information Sheet.

Student Participant's Name : _____

Student Participant's Signature : _____

Date : _____

Parent's/Guardian's Name : _____

Parent's/Guardian's Signature : _____

Date : _____

ⁱ Please note that the project title is tentative.

Appendix D – Interview guides

Teacher semi-structured interview guide [edited 10 June 2014]

Interview 1 (late June 2014, before the start of Semester 2)

- Inform teachers before interview that they will be asked about their assessment tasks, and encourage them to bring relevant artefacts.

Opening:

- Welcome the teacher and thank her for coming.
- Hand her the information sheet and consent form to be signed. Explain objectives briefly.
- Let her know that the interview will be recorded and that she has the right to withdraw from the interview at any time she wishes.
- Assure interviewee that her responses will be kept anonymous, and her critical opinions are valuable. Ask her if she has a preferred pseudonym.
- Ask her if she has any questions about the process of the interview. [turn the recorder on if conversation is interesting]

Question prompts:

Past/current digitally-mediated assessment practices

1. Please tell me about the different tasks you use or have used to assess English Language in class.
2. How did you plan or design your **digital** assessments? What was the process like?
3. Why did you choose to assess students in these ways?
4. What worries did you have before administering these assessments for the first time?
5. Tell me about the challenges experienced, if any. How did you overcome them?

6. Do you think these are good ways of assessing digital literacies? Why?
7. How do you think your students have benefited (if at all) from the assessments?
8. How have you benefited (if at all) from the assessments?

Digital literacies

9. What, in your opinion, are digital literacies?
10. How do you think they are relevant to your students' lives?
11. Do you think they should be assessed in school? Why?
12. Do you think your colleagues share your views? Why?

Future digitally-mediated assessment practices

13. What assessment tasks do you have planned for the coming semester?
14. How are they different from last semester's? Why did you make these changes?
15. What sort of challenges do you anticipate?
16. How do you think you might be able to overcome them?

Closing:

- Ask if they have any questions.
- Thank them.

Teacher semi-structured interview guide

Interview 2 (Sep school vacation 2014, before the start of Term 4)

- Welcome the teacher and thank her for coming.

Question themes [practice elements]:

<p><i>Materials (=things)</i></p> <ul style="list-style-type: none"> • <i>Objects</i> • <i>Infrastructures</i> • <i>Tools</i> • <i>Hardware</i> • <i>The body itself</i> 	<p><i>Competence (=multiple forms of understanding & practical knowledgeability)</i></p> <ul style="list-style-type: none"> • <i>Know-how</i> • <i>Background knowledge & understanding</i> • <i>Practical consciousness</i> • <i>Deliberately cultivated skill</i> • <i>Shared understandings of good or appropriate performance in terms of which specific enactments are judged</i> 	<p><i>Meaning (=the social & symbolic significance of participation)</i></p> <ul style="list-style-type: none"> • <i>Mental activities</i> • <i>Emotion</i> • <i>Motivational knowledge</i> • <i>Ends, projects, tasks, purposes, beliefs, emotions, moods</i>
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Assessment events:

- *Process writing for situational writing (formative)*
- *Project work presentation (summative)*
- *Online curation project (formative)*

Semester 2 Term 1 assessment overview

1. Could you summarise/briefly describe the assessments that you did (formative and summative) using ICT this past term?
2. What were the objectives of these assessments?
3. Do you think they were met?
4. Do you think it's important to assess the students in these ways? Why?
5. Would you use these exact assessments again?
6. What would you change about them, if anything?

Materials

7. What are some of the *practical* problems you and your students faced this term in using ICT for assessment in class?
8. Did you face problems with things like facilities, devices, internet access, software/apps?
9. What were the issues, if any, with time management, physical limitations or health?

Competence

10. Did you think your students performed well in these assessments? In what ways did they do well? What did they do badly?
11. What do you think are the reasons they did poorly? What are the possible barriers they faced?
12. Do you think you conducted these assessments well? In what ways did you do well? What could you have done better?
13. What personal challenges did you face in carrying them out?
14. Do you think your personal experiences, habits or practices helped or hindered you in carrying them out? In what ways?
15. What new knowledge or skills or understandings did you have to acquire in order to conduct these assessments?
16. How did you go about acquiring them?
17. What challenges did you face in acquiring or applying them?

18. What knowledge or skills or understandings do you think you still lack?

Meaning

19. Are you satisfied with what you and your students have achieved via these assessments?

20. What were some of the feelings and emotions you experienced during these assessments?

21. How do you think your students feel about these assessments?

22. How did you deal with the negative reactions and/or emotions (yours or theirs) that arose?

Teacher semi-structured interview guide

Interview 3 (early Nov, after results have been released and students have gone on vacation; end of academic year)

- Thank the teacher for coming. Tell her that this will be an interview with a focus on the curation project. It will rehash some of the things we talked about in the last interview.
1. Could you tell me again about the online curation project, in more detail now that it's over?
 2. Could you take me through the final marking rubric for this project briefly? How does it work? Can you explain using an example of student work?
 3. Were there any other graded components?
 4. What were the formative (i.e. ungraded) assessments you used? Why were they used?
 5. Do you think you met the objectives of this project?
 6. What were the major problems you encountered in facilitating this project?
 7. Are you happy with how this project went? Why?
 8. Were there any points along the way when you felt unhappy or dissatisfied or otherwise negative about the project? Why?
 9. What do you think were the major problems your students faced?
 10. What were the major points of confusion for them, in doing this project? Why do you think they occurred?
 11. Do you think your students did well for this project, generally?
 12. Were the enduring understandings achieved?
 13. What did they tend to do better? Do worse? Why?
 14. Could you briefly tell me about how individual groups performed? How were they affected by the problems you mentioned earlier? Other problems?
[Bring up student work on Edmodo.]
 15. How do you think your students perceived this project? How did they feel about it?

16. Do you think they found it meaningful and worthwhile (to do)? Why?
 17. Do you think how they thought and felt about the project affected their work?
 18. Does their reaction affect your evaluation of the project (i.e. how well you think it went)? In what way?
 19. What could be done to help students do better in the future (if they were to work on something similar)?
 20. Do you think they 'got' curation? Why (not)?
 21. Do you think they could do their own online curation in the future? What might stop them from doing it?
 22. What would you change about this project, if anything?
- Ask if they have any questions and thank them.

Appendix E – Transcription conventions

Du Bois's (2006) Transcription Delicacy Hierarchy

Linguistic Society of America
Albuquerque, January 7, 2006

Transcription Delicacy Hierarchy

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Table 1. *Transcription Delicacy Hierarchy for Discourse Transcription*

	Level	1	2	3	4	5	6	7	
	Type	Preliminary	Basic	Boundary	Interaction	Intonation	Prosody	Multimodal	
1	Core	words	pause	closure/finality	vocalism	accent	prosodic sentence	recording alignment	1
2		word sequence	marginal words	appeal/question	manner/quality	appeal onset	paratone	audio waveform	2
3		speaker change	laughter	truncation/cut-off	vox	head/tail	declination unit	timeline/score	3
4		turn sequence	overlap start	breath	quotation quality	terminal pitch	isotony	pitch curve	4
5		intonation unit	overlap end	pause duration	gesture	contour/tune	accent unit	amplitude curve	5
6		speaker label	unit sequence	lag/lengthening	gaze	tone	tempo/rush	energy curve	6
7				hold/micropause	body	chant/stylization	stress	spectrogram	7
8				latching	co-action	booster	isochrony	intonation stylization	8
9				linking/non-break		reset	register		9
10				suspended IU		key	range		10
11	Meta	comments	sentence start	participation framework	disfluency	phonetic variation	transcription tool link	11	
12		unintelligible	pseudograph	recipient/addressee	repair	phonetic segments	coding links	12	
13		uncertain	index	non-interactive agent	participant gloss	segment timestamp	annotation graph	13	
14		recording source	timestamp	non-vocal event	turn/backchannel	event duration	participant database	14	
15		conventions		code-switch		morphology	event database	15	

[Version 2.0, revised 28-Dec-2005]

MEANING

SYMBOL

COMMENTS

Level 1: Preliminary

words	word word	space before & after marks boundary (standard orthography)
word sequence	word1 word2	words written in conventional order, e.g. left-right (standard)
speaker change		start new line when new speaker begins speaking
turn sequence		speaker change sequence marks approximate turn sequence
intonation unit		each intonation unit is written on its own line
speaker attribution	JILL;	semicolon follows name in CAPS

Level 2: Basic

pause, untimed	...	pause lasting 0.2 seconds or more
marginal words		<i>uh, um, mm, unh-unh</i> , etc. (quasi-standard orthography)
laugh	@	one per pulse or particle of laughter
overlap (first set)	[]	align left square brackets vertically
overlap (2nd set)	[₂]	align left brackets, co-indexed with subscript numeral
unit sequence		top-to-bottom page sequence marks intonation unit sequence
unintelligible	###	one symbol per syllable
uncertain	#you're #kidding	transcribed words are uncertain
comment	((WORDS))	analyst comment on any topic
recording source		use comment notation to cite source of recording
conventions		use comment notation to cite transcription conventions used

Appendix F – Apps/programs and websites

1. Diigo (www.diigo.com) - A social bookmarking website that allows users to bookmark and tag web pages. It also offers features like highlighting and attaching sticky notes to specific parts of a webpage.
2. Dropbox - A cloud-based file storage and synchronisation service.
3. Duolingo (www.duolingo.com) - A popular language learning platform that offers fun, bite-sized lessons to help users gain real-world communication skills.
4. Edmodo (www.edmodo.com) - A social learning platform that was once popular in education but is now defunct.
5. Evernote (www.evernote.com) - A note-taking and archiving app that allows users to capture and organise their ideas, notes, and documents.
6. Facebook (www.facebook.com) - A social media website that allows users to connect with friends, share updates, photos, and videos, and join communities.
7. Flickr (www.flickr.com) - An image and video hosting website where users can upload, share, and discover visual content.
8. Google Docs (docs.google.com) - A word processor app on Google Drive that allows users to create and collaborate on documents online.
9. Google Drive (drive.google.com) - A cloud-based file storage and synchronisation service provided by Google.
10. Google Sheets (sheets.google.com) - A spreadsheet app on Google Drive that allows users to create and collaborate on spreadsheets online.
11. Haiku Deck (www.haikudeck.com) - A presentation app that focuses on visual storytelling, allowing users to create visually appealing slideshows.
12. Kahoot (kahoot.com) - A game-based learning platform that enables the creation and sharing of quizzes and interactive learning games.
13. MAXQDA (www.maxqda.com) - A software program used for qualitative data analysis.
14. Mindomo (www.mindomo.com) - A web app for mind mapping and brainstorming, helping users organise their thoughts and ideas visually.

15. OneDrive (onedrive.live.com) - A cloud-based file storage and synchronisation service provided by Microsoft.
16. OneNote (www.onenote.com) - A note-taking and archiving app that allows users to capture and organise their ideas, notes, and documents, developed by Microsoft.
17. Padlet (www.padlet.com) - A digital noticeboard that allows users to collaborate and share ideas, images, and documents in a visual and interactive way.
18. Pinterest (www.pinterest.com) - A social media platform that allows users to discover, save, and share images and curate topics of interest.
19. PowerPoint (www.microsoft.com/en-gb/microsoft-365/powerpoint) - A presentation app developed by Microsoft, commonly used for creating slideshows and presentations.
20. SGAG (www.sgag.sg) - A Singaporean meme community website that features humorous content and memes related to Singaporean culture.
21. STOMP (stomp.straitstimes.com) - A citizen journalism/forum website in Singapore where users can share news, opinions, and stories.
22. Storify (www.storify.com) - A social networking service that was once used for curating social media content, but is now defunct.
23. TodaysMeet (www.todaysmeet.com) - A backchannel chat platform designed for classrooms, allowing students and teachers to have real-time discussions during presentations or lectures. Now defunct.
24. Tresorit (tresorit.com) - A cloud-based file storage and synchronisation service.
25. Twitter (www.twitter.com) - A social networking and microblogging platform where users can post and interact with short messages called tweets. Now rebranded as X.
26. Typeform (www.typeform.com) - A popular online form builder and survey tool.
27. VideoNotes (video.unishared.com) - A web app that allows users to annotate and take notes while watching videos, helping them organize and review important information. Now defunct.

28. Vimeo (www.vimeo.com) - A video hosting and sharing platform that focuses on high-quality and artistic content.
29. WhatsApp (www.whatsapp.com) - A messaging app that allows users to send text messages, make voice and video calls, and share media files.
30. Yahoo (www.yahoo.com) - A web services and search engine that offers a variety of features including email, news, finance, and more.
31. YouTube (www.youtube.com) - A video sharing platform where users can upload, watch, and share videos.